INTEGRATION OF MOBILE LEARNING IN ENGLISH VOCABULARY LEARNING IN AN IRANIAN SCHOOL IN KUALA LUMPUR

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ABSTRACT

The purpose of this quasi experimental study was to examine the effectiveness of mobile (SMS) learning on Iranian EFL learners' English vocabulary learning. In addition, this study compared two approaches of vocabulary learning, namely, SMS learning and paper text learning in an Iranian school in Kuala Lumpur. The media richness theory (Daft & Lengel, 1986), Bloom's Taxonomy theory (Anderson, 2001) and Motivation theory (Keller,1987) were chosen as the theoretical foundation for this study. Furthermore, this study investigated whether there was any significant difference between the control and experimental groups of participants regarding their learning and satisfaction scores. Finally, the study also tried to investigate the relationship between the participants' vocabulary learning and satisfaction scores. The present study was conducted in an Iranian school in Kuala Lumpur, Malaysia. Indeed,41 students from two third grade classes, with the same teacher, were selected based on convenience sample procedure to establish the samples for collecting the quantitative data. In order to provide interview data, six learners who had participated in the experimental group were purposefully selected as the interviewees of the study. They were interviewed to identify why SMS learning can affect their vocabulary and satisfaction with learning. The age of students ranged from 16 to 17 years. This study adopted *t*-test, ANCOVA, and correlation coefficient to analyze the data obtained from the standard tests and questionnaires. For interview analyzing, inductive thematic analysis was used. In addition, the findings revealed that learning of vocabulary by SMS resulted in significant differences in the learning and satisfaction scores between the control and experimental groups. Furthermore, the results indicated a positive medium correlation between learning and satisfaction scores of the learners in the experimental and control

group. In conclusion, findings based of data showed that learning by SMS could be used as a complementary strategy in the learning of English vocabulary among EFL learners due to some of its capabilities such as its availability anywhere and anytime besides being an attractive method for learners.

INTEGRASI PEMBELAJARAN MOBILE DALAM PEMBELAJARAN KOSA KATA DI SEBUAH SEKOLAH IRAN DI KUALA LUMPUR

ABSTRAK

Tujuan kajian quasi experimental ini adalah untuk menyelidik keberkesanan pembelajaran sistem pesanan ringkas mobile (SMS) ke atas pembelajaran kosa kata pelajar EFL Iran. Kajian ini juga membandingkan dua kaedah pembelajaran kosa kata iaitu pembelajaran SMS dan melalui teks bertulis di sebuah sekolah Iran di Kuala Lumpur. *Media richness theory* (Daft & Lengel, 1984), teori taksonomi Bloom (Anderson, 2001) dan teori motivasi (Keller, 1987) terpilih sebagai asas teori kajian ini. Kajian ini juga menyelidik sama ada terdapat perbezaan signifikan antara kumpulan rawatan dan kumpulan kawalan dalam skor pembelajaran dan kepuasan pembelajaran. Akhir sekali, kajian ini menyelidik perhubungan antara pembelajaran kosa kata peserta kajian dan skor kepuasan mereka. Kajian ini dijalankan di sebuah sekolah Iran di Kuala Lumpur, Malaysia. Dalam fasa kuantitatif, 41 pelajar dari dua kelas gred tiga dengan guru yang sama telah dipilih berdasarkan persampelan mudah untuk mengambil bahagian sebagai sampel untuk pengumpulan data kuantitatif. Untuk data temu bual, enam pelajar yang telah mengambil bahagian dalam kumpulan eksperimen telah dipilih secara bertujuan sebagai interviewee kajian. Mereka ditemu bual untuk mengenal pasti mengapa pembelajaran SMS boleh mempengaruhi kosa kata dan kepuasan pembelajaran mereka. Umur pelajar antara 16 hingga 17 tahun. Kajian ini menggunakan ujian-*t*, ANCOVA, dan pekali korelasi untuk menganalisis data terkumpul melalui ujian standard dan borang soal selidik. Untuk analisis data temu bual, analisis tematik induktif digunakan. Selain itu, hasil penemuan menunjukkan bahawa pembelajaran kosa kata melalui SMS menghasilkan perbezaan yang signifikan dalam skor pembelajaran dan kepuasan pembelajaran antara kumpulan kawalan dan kumpulan eksperimen. Hasil

kajian juga menggambarkan terdapat korelasi yang positif dan sederhana antara pembelajaran dan kepuasan pelajar dalam kumpulan eksperimen dan kumpulan rawatan. Sebagai rumusan, hasil kajian menunjukkan pembelajaran melalui SMS boleh digunakan sebagai strategi pelangkap dalam pembelajaran kosa kata Bahasa Inggeris dalam kalangan pelajar EFL oleh kerana keupayaannya seperti ketersediaan di mana-mana dan setiap masa dan juga kerana kaedah itu amat menarik bagi pelajar.

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List of Abbreviations

Short Message Service (SMS)

Electronic Learning (E-Learning)

Distance Learning (D-Learning)

Mobile Learning (M-Learning)

Mobile Learning (ML)

Learning Score (LS)

Satisfaction Score (SS)

Mobile Learning Tool (MOLT)

English as Second Language (ESL)

English as Foreign Language (EFL)

CHAPTER I

INTRODUCTION

Throughout history, human beings have acquired knowledge. This knowledge has helped them to improve their lifestyle. Everybody has to spend money and time for enhancing their intellectual knowledge. However, the approach of learning has been changed due to the recent advances in technology and E-learning (Electronic Learning). Nowadays, E-learning has become a vital learning method due to the rapid development of computer and Internet technologies. Thus, learning approaches have to develop along with these rapid changes in technology.

The E-learning platform works to integrate different media technologies in order to generate a greater multimedia instructional technology. These different media technologies include text, picture, audio, animation and video. According to Vichuda, Ramamurthy and Haseman (2001) this works to increase overall learner enthusiasm and motivation. However, it should be cautioned that over utilizing unnecessary multimedia elements in instructional technology may distract learners and end up reducing learning presentation (Barstch & Cobern, 2003). Therefore examining how to expand a cost-effective multimedia instructional technology according to the properties of instructional content is increasingly becoming a significant subject of E-learning. Unfortunately, present literature is lacking on how to address this matter.

Learning courses via email is an example of electronic learning. Throughout the last decade, people around the world have been able to utilize email as a way to involve themselves in guided independent studies. Learners receive written lessons, do written assignments and receive comments from the isolated tutor. In addition, the abundance of modern electronic technologies now makes it feasible to be familiar with place-shifted education with an astonishing group of additional auditory and visual stimulus, far more

rapidly, and with a far richer range of communication -- both with the mentor and with other learners.

In general, learning can be categorized into formal and informal education. For example, if we go to a place in order to learn something we call it formal learning. We are also learning all the time through a process of informal learning from our friends, relatives, environments, and so on. As Heinich, Molenda, Russell, and Smaldino (1996) have declared: “learning is the development of new knowledge skills, or attitudes as an individual interacts with information and environment” (p. 8). We are learning throughout our lives, even by walking down the street and interacting with people. This type of secondary learning is not a major concern among instructional professionals. Gradually, we are joined primarily with the learning that happens in response to our instructional hard work. How we design and arrange instruction depends on what is learned and how the learner uses what is learned. Hence, the learning and teaching process deals with the variety, arrangement and delivery of information and the interaction with that information.

Furthermore, there are some purposes during the learning, which should be considered by instructors. Specifically the instructor must consider the most appropriate way to guide students towards appropriate knowledge via relevant learning activities that help them process information. At the same time, the instructor must monitor the students’ performance while providing relevant feedback aimed at helping them reach a higher performance level.

On the other hand, the set of actions that enhance the learning of individuals is called training. Training is a part of the educational system, and can be changed based on the necessities of the students, their age and their capabilities. Instruction sometimes includes factors that produce the pages of print, pictures, television programs, or the combination of physical objects, accompanied with other things. In the educational

system, the school's opportunities are important because only in the school is the training presented. Presented instruction in the educational system is altered based on the needs of schools, type of the school, and tools used by the schools such as computers, Internets networks, overheads, data projectors and other equipment which can help students and teachers in the teaching and learning process. In other words, instruction can be effected by educational technology that the schools possess. In this way, the role of instructional technology becomes vital when the instructor considers other aspects of learning and teaching. Moreover, we need to plan how the instruction can be properly done. Instructional designing refers to this notion.

The technology of creating learning experiences and learning environments that improve these instructional activities is made by instructional design. Similar to all knowledge, the science of instruction stemmed from particular assumptions about the actual world. The discovery that verifies instruction and instructional design is completed by creation. Instructional skill, the foundation for the technology of instructional design, is the innovation of instructional strategies. According to Isman, Caglar, Dabaj, and Ersozlu (2005), instructional science deals with identifying the variables to consider (descriptive theory) and the potential relationship between those variables (prescriptive theory), and then empirically testing these relationships in both a field and lab setting. The expansion of instructional design procedures, instructional design tools, and the technology of instructional design are developing. Moreover, the tools of instructional design, similar to other technologies, are not a normal occurrence. They have been designed to provide for our needs.

Students will perform better if they have access to innovative inventions. On the other hand, they must integrate the scientific philosophy involved in instructional strategies. Isman et al. (2005) uses an analogy to clarify the point that instructional strategies must be integrated with other issues and these strategies are like the invention

of the airplane that had to integrate the discovered principles of lift, pull and flight. In order to create a flying airplane, the Wright brothers had to first discover the principles of aerodynamics. Only upon discovering and learning the science of aerodynamics could they incorporate it with appropriate technology and succeed in developing the airplane.

Achievement of specific awareness and skill will be given to students by instructional design because it will help increase the value and knowledge of the learning experiences and environments. Instructional design is a skill that integrates identified and confirmed learning strategies into instructional experiences that make the gaining of facts and skills more feasible and attractive. It is only after we discover correct instructional strategies that we can pursue developing instructional designs and tools that will encourage and foster student learning.

Since the processes of learning are not completely understood, the analysis and design of learning processes must be done cautiously, because the details of these processes differ from person to person. In order to minimize this problem, we can use educational or training software that changes the capabilities of human learners. The set of these processes are called instructional strategies. The acquisition of different types of knowledge and skills require different conditions for learning (Gagne, 1985). Attractive and effective learning, and also desired outcomes, will not occur if an instructional skill or situation does not embrace the instructional strategies required for obtaining preferred knowledge or ability.

Instructional design includes development, regulation, knowledge, skill, arrangement and actuality. The quality of instruction will be guaranteed if the instructional design is carried as the systematic development of instructional qualifications using learning and instructional theory. In other words, expansion of instructional materials and activities, test and evaluation of all instruction and learner

activities is done by instructional design. In the same way, we can say that as a regulation, instructional design is a subdivision of awareness related with research and theory about educational strategies and the process for increasing and using those strategies. Moreover, instructional design is the art of creating detailed conditions for the development, execution, assessment and keeping of situations that facilitate the learning of both large and small units of subject matter at all levels of difficulty. Any point in the design process can be started by instructional design; the core of an instruction situation is often sparked by an idea. By the time the entire process is done, the designer looks back and checks to see that all parts of the "science" have been taken into account. After that, a complete strategy is written up as if it occurred in a logical approach. A part of the instructional system and instructional tool can be instructional design. An instructional system is an arrangement of possessions and actions to ensure better learning. Instructional design is the orderly procedure of increasing instructional systems and instructional enhancement is the procedure of implementing the system or plan. Instructional technology is the general and organized use of strategies and techniques consequential from behavioral, cognitive, and constructivist theories to solve instructional problems (this will be explained in more detail in the following chapter).

Conventionally, electronic learning objects (virtual 'courseware') intentionally evolved for playback on exceptional devices; for example, cassette tapes, videotapes, CDs, television, personal computers and so forth. Accessing courseware purposely developed for these electronic items resulted in a limited learning approach, restricting the ability of mobile students to take courses. M-Learning, as a division of D- and E-Learning, was developed to conquer such restrictions (Figure1.1).

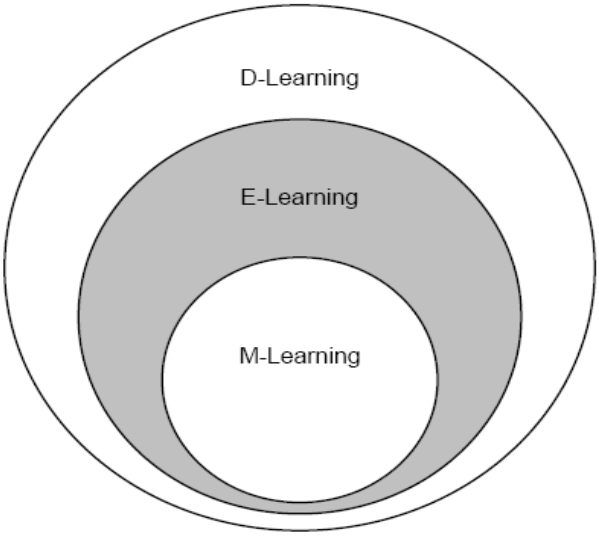

Figure 1.1: Place of mobile learning as part of electronic learning and distance learning. Source: Tsvetozar Georgiev, Evgenia Georgieva, and Angel Smrikarov (2006).

In particular, Mobile learning, or M-learning, a relatively new concept, has attracted the interest of educators, researchers, and companies developing learning systems and instructional materials (Uzunboylu, Cavus, & Ercag, 2008). In other words, the reason for using software generally and Short Message Service (SMS), especially for education, is to help learning. When a particular type of instructional software is being introduced in the education system the potential of that instruction becomes the major focus as expected.

According to Van't Hooft, Diaz, and Swan (2005) participants expressed satisfaction with using mobile learning. Uzunboylu et al. (2008) have also mentioned that the majority of a sample consisting of a total of 217 students expressed their liking for using mobile devices and that mobile phones (ML) represented a fun and valuable learning tool. They add that a review of relevant literature confirms that mobile technologies can be used as a way to engage students in activities aimed at enhancing creativity, collaboration and critical thinking.

In this study, SMS learning has been considered as mobile learning for the following reasons:

New English vocabulary as a content of learning has been put inside the interesting sentences and sent to students in experimental group by SMS (Short Message Service). Science, mobile phone carry out the SMS, the learning by which has been created as a result of this phenomenon is called mobile learning. Mobile learning occurs when someone is moving for instance during travelling and content of learning is available on the mobility devices such as cell phone, laptop, Palm top, tablet and so forth (this part will be added in mobile learning definition in p. 50)

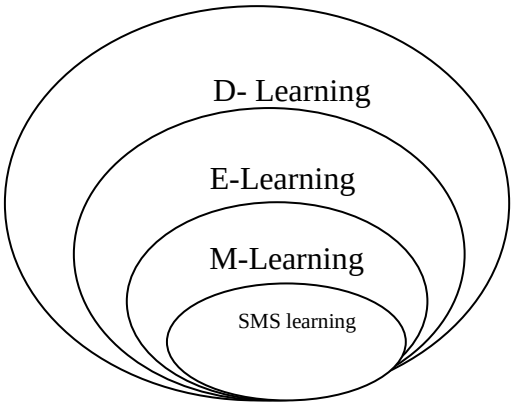

Figure 1.2: Place of SMS learning as part of mobile learning, electronic learning and distance learning. Source: (adopted by researcher)

1.1 BACKGROUND OF THE STUDY

The use of wireless technologies in education has been increasing all over the world. In fact, wireless technologies such as laptop computers, tablet computers and mobile phones are changing education and moving the traditional classroom-based learning and teaching into anytime and anywhere education. Since knowledge is developing remarkably fast at the present time the rate of learning has to be increased too. Unfortunately, life is so complex today that most of the people cannot afford the

time to get enrolled in formal educational settings. Therefore, we must look for some other indirect ways for learning.

Thus, the purpose of this study is to investigate the use of short messaging service (SMS) as a wireless technology in education with particular reference to the potential of learning new technical English language words. This study is deemed useful as technology advancement is putting more and more people into direct contact with mobile devices that help shape their daily lives. A previous study examining the effectiveness of the Mobile Learning Tool (MOLT) with 45 first-year undergraduate students has revealed that the students enjoyed learning new vocabulary words with the help of their mobile phones. The researcher believes that using the MOLT system as an educational tool will contribute to the success of students.

The reasons for using mobile phone as an instructional media can be understood through the following:

The first reason is related to the accessibility of mobile phones and the fact that the majority of people now have and use mobile phones as a primary communication device. More than 90% of Finnish students (Divitini, Haugalokken, & Norevik, 2002) and Irish students (Hegarty, 2004) own mobile telephones. Within educational environments, students frequently move from place to place (Muhlhauser & Trompler, 2002), but the mobile telephones that they carry are immediately accessible throughout the day (Roibas & Sanchez, 2002). One of the advantages of mobile phones is multi using, meaning that mobile phones can be used for listening to music, taking pictures, browsing the internet and as an educational device. It is designable in order to give students more information related to lesson materials. Thus, when devices such as mobile phones, iPod and smart phones are accessible, anytime and anywhere, with multipurpose use, they can and should be used to facilitate learning performance.

The second reason is related to the attraction of mobile phones for teenagers and high school students and it can make them joyful. Most of the time, the majority of Iranian teenagers use their hand phones just for fun; they send and receive funny text messages more than talking. And here teachers can take the responsibility of changing these SMS to interesting ones with educational goals enabling Iranian teenagers to have fun while engaging in indirect learning.

The growing role of media devices as an educational tool is growing, which puts increasing importance on these tools. As reported:

> *Knowledge about learners' uses and gratifications of the online learning initiative will provide a clear picture of the online learning environment they experienced, and could be vital for the development of online initiatives and optimization of online learning environments, because successful interaction with online learning environment increases learner satisfaction and productivity and strengths acceptance of the innovation.*(Bessiere, Ceaparu, Robinson, Shneiderman & Lazar, 2004, p. 94).

The integrating of text messaging as an instructional media with lesson materials can make students gain satisfaction from learning and at the same time stimulate them to more learning. It is clear if learners like something they enjoy it and they learn it faster and remember it longer and they are motivated to learn more. Gratification approaches have been used by some researchers as a way to investigate the effectiveness of web based learning environments. Dwyer (2003) examined whether the effectiveness of web-based learning results from the information design and appeal. Dwyer's results indicated that the visualization of the learning environment is most effective when it is designed according to the specified learning objectives. His research also revealed that when the learning environment provides variation the students tend to feel more satisfied with their overall learning. Another study examining student satisfaction with web based learning conducted by Thurmond, Wambach, Connors, and Frey (2002) found that technology and tools used in virtual learning environments are

motives to help predict satisfaction. Moreover, Song (1998) and Al-Omari (2009) concluded that the design of the course content is a motive itself to predict satisfaction.

The third reason is related to the characteristics of learners who need to have media with more interaction. For example, some investigators explored that learner characteristics can influence learner knowledge. A study by Howland and Moore (2002) found that students who were positive about online learning were also those that tend to be constructive learners while those with negative perceptions expressed needing more teacher feedback. Garrison and Anderson (2003) posited that online learning needs to be viewed in a more cognitive framework. With online learning the learner is supposed to take more responsibility and play a more self-directed active role in order to succeed in the online course. In order to aid students in being more comfortable, the content should be well designed in an organized manner as well as personalized (Clark, Arkin, & Ram, 2002).

The next reason is related to the use of mobile phones in Iran. Generally, in Iran, people use SMS for fun and entertainment and not for educational purposes. Basically, every phenomenon has advantages and disadvantages. SMS is normally used for irrelevant and fruitless activities. Unlike years ago when mobile phones were single use devices, mobile phones today have expanded to serve a wide range of needs that keep people on the go in contact with the most up-to-date information. Once again technological advancements made common terminology difficult to decipher as each type of device changes constantly and features traditionally belonging to one type of device are now found on others.

Here we will explore the popular category of mobile communication devices, and explore the similarities and differences between some of the popular products. Mobiles or cell phones are used in different ways such as voice call, video call and messaging in order to communicate among two or more people and to exchange

important information and greetings. Invitations or advertisement text are also transferred by SMS. Moreover; they can be used for learning and teaching as well. For instance, students individually, or in groups, given an assignment can coordinate with each other via SMS. According to Ramos and Trinona (2009) sending text messages has become an essential part of teenagers' daily life and instruction presents an exciting new application area for SMS as it offers adolescents a different technique to connect and join in a classroom. Educators can find out students' understanding of an assignment or discussion and correct teaching methods in order to facilitate study and recover test scores. In other words, teachers can now better keep up with and teach high school students in the classroom by accessing outcomes in real time.

As for mobile messengers, Poll Everywhere (an educational software) will provide the SMS (Short Message Service) classroom response platform. It should be mentioned that Poll Everywhere is the fastest way to create smart real-time skills for events using mobile devices. With the help of Poll Everywhere, the platform for classroom related messaging; Mobile Messenger will offer free SMS traffic for students and educators. This will allow millions of U.S. high school students to send, via their existing mobile devices, SMS responses to educators' quizzes or lectures. The unique SMS program by Poll Everywhere transforms the mobile phone from a distraction in the classroom to a powerful learning tool.

In general, all of mentioned devices, and especially text messaging, can be suitable ways for teaching and learning if they are used by teachers and students purposefully.

1.2 CONTEXT OF THE STUDY

Nowadays, relationship among the nations is inevitable because of advanced technologies. Many persons are so eager to obtain information about different nations,

cultures and their lifestyles. Above all, they need each other; some countries are rich culturally, while the others might be countries rich in terms of science or technology. For this reason, they have close relationships to each other in order to meet their needs not only economically but also scientifically. In addition, it happens because of political reasons as well. According to McRobbie (2003) in the past few decades information technology (IT) has created revolutionary changes in how we work, learn, and interact. He adds that new infrastructure for business, academic research, health care, and social interaction and new opportunities for economic development have been created by improving and expanding the development of microprocessors, networking, massive data storage, imaging, and software. Internet skills have facilitated construction of universal networks that present broad access to distributed information. In addition, the barriers of space and time have been eliminated as these advances occurred and, at the same time, we expand more direct and urgent access to learning materials, to the world's rarest historical artifacts, to visual art, recorded music, and to broadcast archives.

As pointed out by Brown et al. (2010), the hardware and software resources are required by the scientists to solve complex problems. On the hardware base, a computational grid is a collection of geographically distributed resources: networks, computers, data stores, and visualization/virtual-reality displays. On the software base, it is the “middleware” necessary to integrate this collection so that its many and varied pieces operate as if they were one. We know this type of distributed computing can work on individual projects -- the challenge is to make it work efficiently, routinely and free of geographical boundaries.

According to “Teachers’ Roles” (2007) at the present time, it looks like the tendency is for teachers’ roles to be modified from being a lecturer to becoming a constructor, facilitator, coach and originator of the learning environment. In other words, teachers’ roles have changed and proceed to change to meet the new conditions

since schools gradually become locations where children learn about the world of work and prepare for successful citizenship by socialization and collaboration with others (Ashton, 1965; Cohen, 1984; Fisher, 2005; Glass & Ellet, 1980; Kennedy, 1973; Littlewood, 2000; Richard & Rodgers, 2000; Tseng, 1999).

As noted by Gibbons (2004a), recent advances in technology have revealed the need for changes and development in the educational field, such as the increased and rapid use of mobile telephones and related technologies since the late 1960s (Ling & Helmersen, 2000; Lundby, Razoumov & Holtzman, 2002; Roschelle & Pea, 2002) which led to the use of mobile telephone technology in the teaching and learning process.

All in all, the mentioned reasons show that the nations need a common language to communicate internationally. Although teaching of all courses is important, the significance of teaching English is imperative.

1.2.1 THE SITUATION OF THE IRANIAN SCHOOL IN KUALA LUMPUR

All content of courses in Iran are taught using the Persian language (Dahmardeh, 2011; Moghaddam, 2006; Safi, 2004). All teachers are Iranian and the majority of them do not know any other language except their mother tongue (Persian). They have to speak and teach in Persian and if the students want to learn English, or any other languages, they have to go to language centers. The same educational curriculum is used in the Iranian school in Kuala Lumpur. In other words, the teachers have to teach the same courses which are being taught in Iran (Zamanifar, 2010, personal communication). According to the Iranian educational plan, the teaching of English courses starts after the ending of primary level (Dahmardeh, 2011; Safi, 2004). In Iran, the educational system is divided into three parts: (1) the first five years as primary school, (2) three years as guidance school and (3) three years of high school. Teaching

English starts from the beginning of Guidance School. As mentioned before, English is a foreign language in Iran. Hence, the students cannot apply their knowledge of English outside the school based on whatever is expected and they cannot communicate with foreign people appropriately (Abbasi & Hosseini, 2009). So mobile learning as a part of learning and also distance learning can help to overcome this problem. In other words, if we can integrate the content of learning to short message services (SMS) while designing instructional media; it is supposed to be helpful in improving learning. It can create learning satisfaction as well. According to Abbasi (2010); as cited by Tabatabaei, and Goojani (2012), learning new vocabulary by SMS can expand one's vocabulary knowledge and facilitate learning.

In particular, in the experimental group, the system of education will be concentrated on SMS services and vocabulary and reading. It is expected that this will encourage Iranian students to learn how to communicate in real contexts.

1.3 STATEMENT OF THE PROBLEM

The teaching and learning of English is one of the most difficult elements in Iran; students prefer to learn English language words in their native language. It means that they translate the English language words to Persian so that they can recognize the meaning of the words only in class for doing homework and an English to English dictionary is seldom used by novice students. They complain that they cannot learn English language words. They think that the English language is too difficult to learn. They prefer to ask about English language learning from their classmates or teacher during or after the class. According to Moghaddam (2006) and Dahmardeh (2011) English is a foreign language in Iran and is not used by Iranians in formal or informal contexts. Foreign language must be taught and learned in the class. In this situation, the learners do not have any opportunity to practice it out of the class (Fauziah & Nita,

2002). For many, their knowledge is limited to the materials taught in the class and the main problem is that they learn all the words in their books, they pass the final test, get top grades, but they cannot utilize their learned knowledge outside the class (Abbasi & Hosseini, 2009; Azimi & Naeemi, 2010). For this reason, learners have very few chances for applying out of the class the English language communication skills and words learnt in class. The classroom is possibly the only place in which Iranian students utilize the English language, in contrast to some English learners who live in English speaking countries that give various chances for the learners to exercise their learned knowledge out of the class. In addition, the students cannot use English language words in actual situations immediately after class finishes.

According to Askari (2009), applying learned English words is a big difficulty for EFL learners in Iran. Most of the unsuccessful students know English language words, but they cannot apply them. In general, language learners do not know how to use the appropriate words in different situations. They can give details for meaning of words and give some examples, but if requested to write a formal letter, they are unable to put it in writing correctly. As Farhadi (2006), Dahmardeh (2011), and Abbasi (2010) assert, learning English is limited to the classroom in Iran. English language is learnt like any other subjects in the school and there is no reinforcement out of the class. The learners pass their examination; they obtain top scores and move to the upper level and it is expected they get everything covered in the prior semester. Finally, they succeed in finishing the semester. In Iran, most of the learners pass the English final test successfully but most of them are incapable of applying English words in their written or oral tasks in real life situations.

As Mesri (2009) puts forth, this problem is not limited just to language learners at lower levels. In fact, many learners at higher levels are concerned about this inability as well. For example, when they come to sit some standard tests such as TOEFL or

IELTS, they cannot use proper words in their speaking and writing sections. Likewise, most of the learners at higher levels are incapable of speaking and/or writing in a proper way. Naeemi (2010) pointed out that perhaps the reason is that their language communication skills knowledge is limited to knowing just certain English words and their meanings. Although they know the definition, synonym, antonym, equivalent in their native language and word family and some even can make some sentences with the words, they cannot write or speak in English.

Another problem regarding the learning of English is related to inert knowledge (Larsen-Freeman, 2001). This term is used for learning grammar; students learn grammar as a set of rules but they cannot activate their knowledge out of the class. The same problem occurs in learning English language words (vocabulary). The language learners are unable to change the passive knowledge into active ones, or in simple words, they cannot use their knowledge. According to Holyoak (1980), Whitehead (1929) and Ross (1984), the information which one can express but not use is called inert knowledge. The process of understanding by learners does not happen to that extent where the knowledge can be used for effective problem-solving in realistic situations. Vocabulary of foreign language is one example of inert knowledge. The learned words are available during an exam but not in a real communication situation. Keeping knowledge alive within itself, or preventing it from becoming inert, is the central problem of all education (Whitehead, 1929).

When there is a problem in inert knowledge, the people often instruct knowledge to a specific situation in order that later reminding takes place only for highly parallel positions. One part of the problem is related to the present method of teaching words by the language teachers. Teaching is also considered a one-sided activity according to Kumaravadivelu (2003). It means that the approach of teaching English language communication skills services and vocabulary is chosen by teachers according to their

experiences, student's ability and materials. On the other hand, teaching based on experiences instead of their knowledge in the class is the main point as Larsen-Freeman (1998) stated. She asserted that "experience is the only real reference point teachers share: experiences as students that influence their views of teaching, experiences in professional preparation, and experience as members of society" (p. 10). In general, as mentioned before, the selected method of teaching has affected the skill of students to use their learned comprehension.

According to Farhadi (2006), it appears that too much attention is given to the final examination results. However, it can be said that in most cases the assessment test itself is not able to evaluate the real outcome of students' knowledge. As Aghakhani (2006) noted, the problem is related to the positive view of the students' parents for the result of the final exam. When the students pass the final test, their parents assume that they will be able to apply English language communication skills. Since the students do not have to apply English knowledge out of the class, their parents assume that passing the final test with a top score means the students learned everything considered in the class. In other words, as Mesri (2009) asserted, because the reason for teaching English words in Iran is just to enable students to pass the examination, the teachers will not ask why students cannot utilize their learned knowledge out of the class.

In Iran, there has been a decline in English language examination results and this has resulted in poor oral communication skills at the workplace (Juhdi et al., 2006). This decline can be linked back to the schools. This then begs the following questions: How does one then quickly improve English proficiency in particular the communicative skills of the learner? Can ICT tools enhance English language teaching and learning? There was then a need to find out if these ICT tools can improve oral communication. It was further needed to explore the factors that hinder students from using the language outside the classroom and how best to provide opportunities for oral communication.

Studying the English language is compulsory under the Iranian curriculum. However, as Dahmardeh (2011) notes, learning of the English language is often neglected within the Iranian educational system. Dörnyei (2005) concluded that most curricular topics are selected based on what is perceived as being important by society for students to learn as opposed to their actual learning needs. Dahmardeh adheres to this conclusion by agreeing that this is the case with Iran when they fail to give the proper attention for English language learning. Rather more emphasis is placed on core subjects such as mathematics, science and the Persian language itself. When it comes to the English language, teachers tend to focus only on what the students need to know to pass the test – rather than focusing on teaching the language in a more useful manner. The teachers are further encouraged to only teach to the test since many of the language exams in Iran focus on key details such as proper grammar rather than assessing real language communication skills. Dahmardeh further expressed that the way English is taught in Iran contributes to a high rate of failure in communicating in English despite students going through seven years of English language learning.

On the other hand, the lack of motivation and poor English usage and contact among learners were some of the necessary reasons for low English language ability (Chee & Troudi, 2006; Fairus, 2003; Hussein, 2002; Krashen, 1976; Pillay, 1995). As Al-Jarf (2004) and Hertel (2003) asserted, students had poor communication skills. Therefore, there was a need to integrate technology into the teaching and learning of English. When students do not see the English language as being pertinent to their immediate needs then they tend to focus on other subjects. As well, when teachers teach to the test and do not bring real life communication lesson plans into the classroom then they experience failure themselves in keeping students motivated and interested in learning the English language (Hussein et al., 2002). Gardner and Lambert (1972) noted that motivation is an important factor second language acquisition. Thus, when students

are not motivated to learn English, and they receive only limited exposure to the language which happens in a classroom, they will not feel the need to carry their lesson beyond the classroom and into daily life. Students learn English because it is part of their curriculum but there is neither genuine interest nor motivation to learn this foreign language.

Lim (1994) stated that speaking is the weakest skill among the four language skills. Good command of English language words is the concern of most of the unsuccessful students but they cannot bring it into play. They can explain the word and give some examples by native words, but they do not perform well in actual circumstances.

The introduction of Information and Communications Technology (ICT) into a learning environment can contribute to improving various levels and types of interaction (Brown & Long, 2006) and enrichment of the learning experience as learners engage in interactions within the learning environment that serve to scaffold application of knowledge (Wiley, 2006). Recent research reported that when the level of interaction is inadequate or nonexistent, learners often feel isolated and degradation of the learning experience can occur (Bibeau, 2001; Howland & Moore, 2002; Mann, 2005; Wanstreet, 2006).

Implementation of any technical innovation into a school system can be an arduous task because of the traditional learning environment currently in place at schools. As noted by Clayton (2003) activities that shape online learning environments include students' interaction with the online interface, their access to tutors and other peers in the online learning environment, their interaction with media sources and relevant learning/reflection activities. According to Allen and Seman (2006) and Pollanen (2007), online learning environments have to fulfill learners' expectations. Learners expect online learning environments to offer them advanced interface and

features that cater to the needs of multiple learners all with different levels of knowledge and ability. At the same time, they are expected to be flexible and user friendly in order to address the levels and needs of each individual student. As Sherry and Wilson (1997) note, the role of the teacher in these environments then becomes that of an educational facilitator who provides just enough guidance to help students explore without directly giving them the knowledge. The role of the student then becomes that of a knowledge generator whereby they actively interact with the e-learning environment in order to seek solutions to problems (Palloff & Pratt, 2001).

When examining English language education in Iran, a variety of predicaments can be discovered. The first, and foremost one, is that of the overall educational goals. All educational goals in Iran are formed by the Ministry of Education, which forms educational objectives within the confinements of older paradigms and infrastructural issues. Curriculum makers fail to take into consideration the overall needs of students, which include future needs. Given that developing curriculums is a complex task that must take into account multiple considerations, it is recommended that local, regional and global needs be taken into consideration as well as present and future needs.

The teachers themselves are the other issue. Many of the English teachers in Iran themselves do not have enough knowledge or grounding in the English language to properly convey and pass on knowledge of the English language. Properly training English teachers in Iran is vital to the success of having students learn English. As noted by Beh-Afarin (2002), English teacher education in Iran is stage bound and sequential which goes against regional inevitabilities.

Another factor affecting English language education in Iran is the lack proper of educational materials. English language learning books tend to over focus on the mechanics of the language without taking it beyond the technical aspects and into “real

world usage". Real world usage refers to how the language is used in normal day to day situations by speakers of the language.

According to Samuel (2009), with growing globalization and eager competition in attracting foreign investments, there is a national alarm that the deteriorating level of English oral communication skills at the workplace could undermine our edge over other Asian countries and may result in serious long-term economic effects in the future. He adds that as English language is expanding in importance as the international language of trade and industry, there is an outcry by the private sector in Malaysia that students graduating from schools, college and universities cannot fit into the job market because of poor English communication skills. As Juhdiand Shaharudin (2006) and Suresh (2006) pointed out, basic English communication skills even among graduates have been horrifying because of poor oral skills.

Studies by Fauziah and Nita (2002) showed that Malaysian students were weak in listening and speaking. The exam had a tendency to focus on testing reading and writing skills and the main reason for learners' ability was the limited chance to use English outside the classroom.

Whitworth and Berson (2003) revealed that there was lack of statistics on why students were not communicating well in English and therefore a questionnaire survey has to be carried out to find out the current status on the availability and use of ICT tools by teachers in teaching listening and speaking skills and the learning of these skills by students.

According to Jafari (2012), although vocabulary knowledge is of utmost importance to the language learning process, it is worth mentioning that no clear syllabus has been defined in the Iranian EFL context to help learners get acquainted with vocabulary learning strategies. Likewise, relatively few studies have

taken into account the learners' proficiency level in using vocabulary learning strategies.

In conclusion, with consideration to the problems mentioned above, it seems that learning takes place in a lower level (remembering or understanding) and does not lead to the application level of Bloom's taxonomy. Therefore, this study attempts to design an instructional technology model in order to find a way to help language learners jump from the lower level to the third level (real-life application).

Furthermore, sometimes, there is not enough information inside the learning system (media richness theory). For that reason, the researcher tries to provide enough information (new English words) for EFL learners in an interesting environment. At the same time instructors should take care not to provide too much information which can prove to be distracting.

1.4 SIGNIFICANCE OF THE STUDY

Since its inception, the mobile phone has evolved from being a tool used to communicate and relay information while out of the house or office to being that of a status symbol and way to define one's every waking moment. Individuals now use their mobile phones to upload pictures and personal thoughts through mobile applications such as Twitter, Facebook, Instagram, and so forth. On top of that, the way one can communicate with a mobile phone has changed drastically since its inception. Now as opposed to merely using a mobile phone to make voice calls, one is able to use it with a variety of messaging platforms, email and even video calls. Today one can reserve airline tickets, join a raffle, remit money from relatives overseas and even follow a favorite soap opera by mobile phone. As well, larger portions of societies, even in countries classified as "third world" are owning mobile phones, with a large percentage having smart phones. Juan and Ramos (2010) note that in many countries individuals

prefer to use mobile phones as they are readily available with prepaid service and "texting" allows them to communicate in a more cost efficient way than making regular calls. Further, they are able to keep in touch with their phones at a more global level much easier than using cyber cafes which can be more costly and less easy to access.

The mass availability of mobile phones and smart phones can be credited to the modern age of globalization. This current trend in globalization, which is dominated by information technology and users' desire to have information at the fingertips makes learning English as an international language a necessity. All people need to know the international language not for going to university or getting a good job and promotion, but also for survival. As English is a foreign language in Iran and since the current methods have not worked very well finding the best way of teaching it is important.

The research done by Juan and Ramos (2010) on the efficiency and commercial capability of using short messaging (SMS) technologies in Mongolia and the Philippines showed that the use of "text messaging" has been growing in these countries; both of which are classified as "third world" countries. Moreover, the majority of people in these two countries use it for communication purposes. There is large potential for this technology to be used in more fruitful ways because of ubiquitous use of SMS. As a style of instruction in distance non-formal education, this access model can be used by educators. In addition, providing simple courses through SMS would have the beneficial effects of adding knowledge, enhancing work performance and encouraging a sense of satisfaction and achievement.

As computer technologies for distance learning are increasingly being used in traditional face-to-face instruction in higher education, college instructors have found that online, interactive text-messaging tools provide opportunities for dialogue for purposes ranging from administrative "housekeeping" to reflective knowledge building. The increasing number of college courses that blend computer technologies with

traditional instruction and learning practices have created a need to understand how to use these technologies effectively (DeArment, 2002).

For many years now, people have been looking for replacement methods in the teaching and learning process to help teachers obtain better achievement. Because of that, they have found some devices in order to help them. It is true that some learners have difficulty while teaching face to face; they feel anxiety or embarrassment in class or in an educational environment. For this reason, educational authorities have been thinking of solving this problem and finding a solution. Given the development of technology in recent years, educational authorities have tried to utilize some media in the process of education, not only to facilitate learning but also to create learning satisfaction. According to Daniel (2010), regular and everyday contact between teacher and student will repay the effort many times over in keeping student attention and course achievement rates. Moreover, Alley (2009) asserted that use of mobile technology is high developed around the world, particularly in developing countries. Using mobile technology to complete daily tasks and socialize with friends and colleagues are done by all the citizens of the world; there is a growing call for learning materials using mobile technology. Also, other sectors of society, such as business, are allowing citizens around the world to use mobile technology to complete daily contracts. Hence, education and training have little choice but to transport learning materials to mobile devices. Some research is needed though to show how mobile learning can deliver learning material. In other words; it will be significant that researchers plan to use new media in the process of learning (ibid.).

A glance at current research done by Thompson (2009) reveals that nearly nine out of 10 further education lecturers think their teaching is improved by using mobile phones and hand-held computers to support student learning, Moreover, a text message survey has found that mobile technologies such as smart phones and personal digital

assistants (PDAs) have helped to raise student achievement and maintenance rates, as well as making learning more elastic and attractive.

According to a study of the first year of the two-year Mobile Learning Network program, the Learning and Skills Council made £6 million available in 2007-08 to support 32 projects involving 10,000 students and more than 2,000 staff at 75 colleges and 18 schools. The money was used to buy more than 10,000 hand-held devices, including PDAs, smart phones, MP3 and MP4 players and digital cameras (Miller, 2001, cited by De Arment, 2002). Moreover, it is obvious that the old distinction between distance education and resident instruction is blurring. It can be concluded that "technology is the enabler of this change, which many feel will transform the teaching and learning environment" (Miller, 2001, p. 3; as cited in De Arment, 2002). In addition, despite the creation of mobile phones and "SMS Text" in the developing countries, its potential contribution to distance education has received little or no attention. The experiment was based on the assumption that most university students in the developing countries already own mobile phones and engage in text messaging.

A sample of student feedback indicates that instructional scaffolding using "SMS Text" can be useful to guarantee students' academic enrichment. Good teachers and instructors have always used scaffolding. The mobile phone and text messaging provide some unique new opportunities to do it differently (Addae, 2008). There is an established research tradition that examines the relationship between the public's understanding of the relative importance of new issues and media coverage of those issues. Agenda-setting research was stimulated by the writings of McCombs and Estrada (1997) who proposed that the new media created the picture in our mind providing a view of the world beyond people's limited day-to-day experiences.

Moreover, as Heinich et al. (1996) have stated, "Instruction is the arrangement of information and environment to facilitate learning" (p. 8). Environment shows not

only where instruction takes place but also the methods, media, and equipment needed to convey information and guide the learner's study. Some new media such as mobile can play an important role for reaching goals.

As noted by Huang and Sun (2010) with regard to mobile learning, it provides learners with another way of studying that can help take their learning experience above and beyond the classroom. With mobile learning students are no longer confined to the walls of a classroom but can use their wireless devices to engage in an "anytime-anywhere" learning experience.

In addition, distance learning as an instructional technology is developing due to the development of technology. Text messaging itself, as a teaching method, can play its role with clarity in the process of teaching and learning. As Smith (2000), Cogill (2002), Cuthell (2005) and Raja Maznah (2006; cited by Jahani 2010) have stated, computers and new tools related to the computer, which have been introduced and applied in schools, have proven successful both in learners' engagement and learning enrichment. Since these are new technologies, the students are interested in using them, and it is hoped that Iranian students will be eager to use these new devices at least for fun. Simultaneously, they would be able to learn some new words under the supervision of their teachers.

As Rae and Carswell (2001) asserted, the distance education environment can provide the physical separation between teacher and student and inaugurates new flexibilities in conveying and receiving instruction which assists and accounts for the popularity of distance education. Moreover, According to Heo and Chow (2005), the online electronic component in the education process helps cheer the students up and they have reported that they have felt less threatened or embarrassed to seek help than in the traditional classroom. On the other hand, when the instructor and students are far away from each other and there is a distance learning, lean media can be more desired

because they reduce social and emotional cues and therefore can reduce pressure upon people. The other advantage is that students have to rely on their own abilities and it is an important factor in increasing their self-esteem indirectly. In addition, as Li (2005) has pointed out, there is a strong relationship between the introduction of ICTs and language learning changes. He adds that a number of issues in the situation of text messaging addressed in this study including linguistic features of SMS have practical significance of these unique characteristics and the communicative functions in this situation.

Since the type of sampling employed in this research is convenience sampling, due to the sampling method employed in this research the researcher cannot say with confidence that the individuals who participated in the research are representative of the total population. However, the selected sample can help make available valuable information regarding the research questions and hypotheses posed.

Agca (2013) believed that students show the mobile device usage as innovative and funny applications in vocabulary learning. Mobile learning environment created curiosity for students and made the vocabulary learning activity more attractive by motivating them in positive way.

1.5 PURPOSE OF THE STUDY

The purpose of this study is to examine the effectiveness of SMS learning assumed to provide availability of content in anywhere and anytime and also interesting environment for increasing motivation among high school students. If so, afterward, the reason of why this devices as a mobile learning experience can have this capability. On the other hand, the researcher tries to see whether this kind of learning can be as a complementary strategy for learning of English vocabulary. Knowing about the effectiveness of SMS learning and the procedures of SMS learning function it is hoped

that learning via SMS can promote vocabulary knowledge among students when they are involved and engaged.

In other words, the purpose of this study will be to gain insight into how text-based messaging tools can enhance learning scores and satisfaction of learning when they are integrated with traditional instruction in English vocabulary learning. Since the findings of this study will have theoretical and practical value regarding an educational issue, this study will help educational authorities in making better decisions that will help improve the educational situation for students. It must not be forgotten that the students play the most important role in educational fields; if they have positive attitude toward learning and learning outcomes the best result can be gained. Thus, the aim of this study is to investigate the level of learning satisfaction among students enrolled at the Kuala Lumpur Iranian School. Since there is just one Iranian school according to Iranian system education syllabus in Malaysia it can have an important role in order to fulfill the lack of formal educational system in Malaysia. Moreover, the students' satisfaction plays an important role in improving conditions and helps authorities gain a better understanding of students' needs**.**

Further**,** the main aim of this study is to test the effectiveness of SMS instruction in the learning of English vocabulary through media platforms such as text messaging based on media richness theory (Trevino, Daft, & Lengel, 1990). In addition, this study will utilize Bloom's taxonomy theory to help understand how learning is promoted from general knowledge to ingrained knowledge through SMS technology.

It is hoped that this study can help the policy makers and educational designers to find the best style of teaching. If teachers are able to find an interesting style for creating motivation in students, the rate of learning will be increased. Therefore, the contribution of this study will be: the use of text messaging as an instructional technology which can affect the understanding of instructional content in high school

students in the Kuala Lumpur Iranian School based on the media richness theory in order to evaluate the effectiveness of learning English vocabulary through SMS instruction. In other words, the researcher wants to see whether there is a significant difference between the learning score of high school students learning new vocabulary in English via text messaging and those learning using the traditional method.

In detail, it can be said that contribution of this study will be as follows:

In formal education, the contribution of this study will be in providing a complementary way of learning that can support, improve and develop students' learning experiences. In informal education, the contribution of this study will be as a device (instructional method) that can make available the content of learning in an anytime and anywhere educational context. On the other hand, it can help students to have an energetic environment and feel pleasure during the learning experience. It is hoped that the study can create more motivation for reading in students and make easier learning and remembering new words with mobiles and show policy makers and teachers new ways of delivering instruction.

Secondly, the investigator seeks to see whether there will be any satisfaction of learning from using text messaging (SMS) as an instructional media. The learners' attitude plays a central role in the field of learning. If their attitudes toward learning are positive they will be encouraged indirectly to learn more. Are there any significant differences between the learning satisfaction of new vocabulary in English via text messaging as an instructional media and traditional method among high school students? Finally, what is the correlation between satisfaction of learning and learning score? Specifically, is there any significant relationship between the degree of achievement as a result of the use of text messaging and the students' level of satisfaction? Moreover, this research develops a research form and three major hypotheses to analyze the effect of text messaging as a media tool on learning

performance and satisfaction and the correlation between them. It is supposed that through mutual communication, we can reduce uncertainty in the process of learning according to the media richness theory. In conclusion, this action will have a positive effect on both learning scores and learning satisfaction.

The central point of study will be using text messaging accompanied with original course material as a scaffold. The study will also examine the performance of the text messaging in improving learning among high school students. Thus, this study is structured as follows: First, we will review the media richness theory from which we develop our richness model and hypotheses. Then an empirical study design will be described and laid out in order to test the hypotheses. After that, key research results will be fully presented. Finally the implications of our findings will be discussed and recommendation will be made for the future.

1.6 OBJECTIVES

According to Creswell (2013) "A research objective is a statement of intent used in quantitative research that specifies goals that the researcher plans to achieve in a study" (p. 122). The objectives of this research are:

- To examine the significant differences between the learning score of high school students learning new vocabulary in English via text messaging as an instructional media and those learning through the traditional method.
- To find out whether significant differences exist between the learning satisfaction of high school students taught new vocabulary in English via text messaging as an instructional media and those taught using the traditional method.

- To investigate whether a significant relationship exists between the degree of achievement as a result of the use of text messaging and the students' level of satisfaction.
- To explore why SMS learning can affect learning scores
- To explore why SMS learning can affect learning satisfaction

1.7 RESEARCH QUESTIONS

The following research questions have been identified for the quantitative portion of this study.

1. Is there a significant difference in the learning scores of EFL learners between text messaging and paper text in learning English vocabulary among high school students?
2. Is there any significant difference between the learning satisfaction of new vocabulary in English via text messaging as an instructional media versus the traditional method among high school students?
3. Is there a significant relationship between the degree of achievement as a result of the use of text messaging and the students' level of satisfaction?
4. Why can SMS learning affect Learning scores?
5. Why can SMS learning affect learning satisfaction?

1.8 HYPOTHESES

The following hypotheses have been established for the purpose of this research.

1. There is no significant difference between the learning scores of EFL learners between text messaging and paper text in the learning of English vocabulary among high school students.

2. There is no significant difference between the learning satisfaction of new vocabulary in English via text messaging as an instructional media and the traditional method amongst high school students.
3. There is no significant relationship between the degree of achievement as a result of the use of text messaging and the students' level of satisfaction.

1.9 MEDIA RICHNESS THEORY

As Creswell (2013) has stated, "A theory in quantitative research explains and predicts the probable relationship between independent and dependent variables" (p. 131). Daft and Lengel (1984) were the first proponents of the media richness theory. Some ideas have been suggested by them and their successors that communication media has different capacities for handling uncertainty, negotiating varying interpretations, and facilitating understanding. Two main guesses of this theory are people who want to conquer equivocality and uncertainty in the organization and mixture of media normally used in business to work better for definite tasks. Applying four criteria, Daft and Lengel show a media richness hierarchy, arranged from high to low degrees of richness, to demonstrate the capacity of media type progression of ambiguous communication in organizations. These criteria have been discussed throughout in the following paragraph.

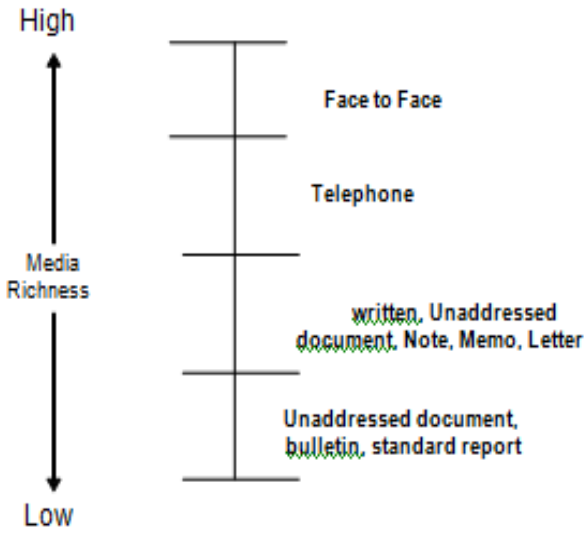

Figure 1. 2: The Hierarchy of Media Richness Theory.

As presented in Figure 1.3, from the strategic management perspective face to face communication is the richest communication medium in the hierarchy followed by telephone, electronic mail, letter, note, memo, special report, final, flier and bulletin (Trevino, Lengel, & Daft, 1990). The media richness theory suggests that effective managers create rational choices corresponding to a special communication medium to a definite task or objective and the degree of richness required by that task.

In addition, media richness theory states that the reason of communication is to decrease uncertainty and equivocality due to the characteristics of communication task, in order to encourage communication competence. Uncertainty is related to the lack of information. Formal information systems, task forces and connection roles are factors created by the organization in order to facilitate the flow of information and decrease uncertainty. The ability to convey the sufficient amount of correct information is the main role of media in reducing uncertainty. For ambiguous situations, equivocality is associated with meaning of negotiation. In addition, people in an organization must find

structures that enable the cycle of rapid information among them to cope with equivocality in order that sense can appear (Daft, Lengel, & Weick, 1984).

The ability to process rich information is the responsibility of media dealing with equivocality. There is differing ability amongst different media to convey rich information (Daft et al., 1987). In communication, it is found that task difficulty and variety is relative to the quantity of information needed to be processed. In other words, there is a direct relationship between task variety and complexity and uncertainty of communication content. Consequently, it requires more information to decrease uncertainty to reach an enhanced result. On the other hand, equivocal task has a tendency to have more ambiguous information. Both sides of the communication usually struggle to infer those clues according to their own experiences. Moreover, misunderstanding is likely to happen as a result of differences in individual experiences (Draft & Macintosh, 1981). To worsen the matter, it is difficult to interpret or represent the content in regulations for the duration of communication (Daft, Lengel & Weick, 1984). As a result, the level of the task of satisfaction that can be interpreted or signified in rules is an important sign of task uncertainty and has been called “analyze capability”. Analyzable task contains more regular information because of more rules and procedures. In contrast, in the un-analyzable task, the content is usually more personal, with a smaller number of cues, and more particular and unprepared (Daft, Lengel & Weick, 1984). Where the content is un-analyzable, the information in it tends to be unclear and irregular and the accurate coding system such as rules or mathematical report will not be appropriate in such kind of communication task (Daft et al., 1981). People need media with higher richness; for instance face to face for low analyzable task because in such locations fast feedback will illuminate the question arising in communication.

Information richness is defined by Daft and Lengel (1987) as being the change in the understanding of information within a time interval. When communication is able to overcome different frames of reference and provide clarity to ambiguous issues and help promote understanding in a timely matter than it is said to be “rich”. On the other hand, communication is considered to be “less rich” when it takes a longer time to convey meaning. According to Daft and Lengel’s theory, media richness should have four characteristics as follows:

- The ability of medium to provide urgent feedback.
- The amount of cues and channels available
- Variety of language
- The amount of purpose focused on the receiver.

All in all, if the mediums have a bigger social presence it will create a larger newness and heat of the communication because of the bigger number of channels.

1.10 COGNITIVE DOMAIN (BLOOM’S TAXONOMY THEORY)

As Bloom (1956) has stated, the cognitive domain includes knowledge and the development of brain abilities. This contains the remembrance or identification of unambiguous truths, practical models, and concepts that serve in improving of intellectual skills and capabilities. There are six main groups beginning from the simplest behavior to the most complex. The categories can be regarded as levels of difficulty. Before going to the next level the first one must be mastered.

According to Seif (2003) since the objectives of cognitive domain deal with the process of mental activities this domain can be the most important domain compared to other domains. There is new and revised category of cognitive domain done by Anderson, Keratol et al. (2001, cited by Seif, 2004). This and also other domains of

learning behaviors such as affective and psychomotor domain will be discussed in the next chapter.

1.11 BLOOM TAXONOMY IN THIS STUDY

According to the cognitive domain of Bloom's Taxonomy in the level of understanding and other levels such as the application level, there are some verbs (key words in understanding levels such as: explains, interprets, paraphrases, predicts, rewrites, summarizes, translates and key words in apply level such as applies, changes, constructs, demonstrates, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses) that show and evaluate whether, during the evaluation, the learners can use these verbs or not. So the researcher tries to provide opportunity in an interesting environment to show these implementations (using of these verbs in the students' assignments). If this happens, the researcher can expect that the level of learners have been promoted to an upper level.

1.12 MOTIVATIONAL THEORY

The term motivation refers to what encourages people to be active in their pursuits. In looking at how Keller defined motivational theory through his ARCS model we can highlight four components as being essential for learning. These four components are: attention (how much focus one puts in for a given task), relevance (how important is the given task to one), confidence (how much confidence one has that one can accomplish the set task) and satisfaction (how much satisfaction does one get from pursuing the task). All four of these components are important when considering how to keep one motivated on the learning process.

1.12.1 MOTIVATION IN MOBILE LEARNING

Although learning English via SMS can potentially be generalized to any language, containing literacy in native languages, we mark ESL as our first step because of its status as an international language. According to Crystal (1997; cited by Kam, 2006) there are 1.2 to 1.5 billion people around the world who make use of the English language. Crystal asserts that English has a special status in more than 70 countries as the official language in law, government, education and the media. For other countries where English does not have a special position, English is nevertheless the language that is mainly taught as a foreign language in over 100 of these countries including Iran.

In this context of English as an international language, a fair proportion of low-income populations in underdeveloped regions want to improve their ESL capability because it is a vital foundation for getting improved access to education, economic opportunities, computer literacy and the Internet, as well as social status. For instance, ESL literacy allows one to discover relatively well-paid jobs in the formal economy, like the civil service, multinational corporations and even rural business processing outsourcing centers. Moreover, most of the written content on the Internet is in the English language.

Out-of-school situation is targeted for children to gain ESL for the reason that the impact of schools in developing countries can be severely limited. In India, for instance, the proportion of children among the ages of six to 10 who really go to school ranges between 39% to 57%, depending on geographic area and gender (Azim Premji Foundation, 2004). Complex reasons account for the current situation; they cannot be condensed into a single reason. However, two reasons are obvious in a number of India-wide surveys. First, depending on geographic area and gender, 13% to 31% of the children surveyed cited they need to work in the fields, house or somewhere else. Less interest in schoolwork is a second factor; only 15% to 43% of the respondents talked

about it. Another key factor is related to lack of qualified instructors. For instance, when rural school teachers in Uttar Pradesh, India were interviewed, the respondents mentioned ESL as one of the three most complicated subjects to educate. Indeed, the same teachers who were teaching ESL could not communicate properly in English (Kam, 2006).

There are two kinds of opinions about the support of parents for their children. Some believe that parents are not always grateful for the value of schooling; the literature proposes that the other side of the coin is similarly credible. It means parents are encouraging their children to go to school but remove their support when they do not see tangible learning results from school (Kumar & Sarangapani, 2005). At the ground level, sometimes, the education system or their own biases place an implicit pressure on teachers to conform to the previous and unproductive teaching approaches. The mentioned reasons propose that technology – in the form of educational games for mobile phones – which cause children to study ESL at suitable times and settings, is a promising solution for two reasons. Firstly, mobile devices can enable children to access educational sources anytime and anywhere, mostly in out-of-school locations like after-school programs, the home and rural areas. Secondly, educational games motivate students by creating a more engaging learning experience. This view is supported by theoretical frameworks on the potential for games to stimulate learners. In the same way, in a bestselling book, the literacy researcher Gee (2006) emphasized how games can integrate good educational attitudes. In addition, educational games have positive learning results in a developing country context. They realized important growth in mathematics test scores accumulated caused by playing computer games that mark mathematics literacy.

The cellular phone is a delivery platform for interactive educational content because it has mobility and penetration in the developing world. For example, a

Vodafone report indicated that Africa is the fastest-growing market for mobile communications in the world between 2000- 2005 (Vodafone Policy Paper Series, 2005). This sentiment is shared by several other members in the Information and Communications Technology for Development (ICTD) community. Other mobile platforms specifically designed for developing countries, like the cellular phone personal computer proposed by Bill Gates, cannot be excluded (Markoff, 2006) and the US$100 laptop started by Nicholas Negroponte from the MIT Media Lab.

1.13 INTEGRATING MOTIVATION

The following Table 1.1 gives the modified subcategories in the ARCS model.

Table 1.1: *Modified Subcategories of the ARCS Model (Keller, 2000).*

Attention
Capture Interest (Perceptual Arousal): *What can I do to capture their interest?* Stimulate Inquiry (Inquiry Arousal): *How can I stimulate an attitude of inquiry?* Maintain Attention (Variability): *How can I use a variety of tactics to maintain their attention?*
Relevance
Relate to Goals (Goal Orientation): *How can I best meet my learner's needs? (Do I know their needs?)* Match Interests (Motive Matching): *How and when can I provide my learners with appropriate choices, responsibilities, and influences?* Tie to Experiences (Familiarity): *How can I tie the instruction to the learners' experiences?*
Confidence
Success Expectations (Learning Requirements): *How can I assist in building a positive expectation for success?* Success Opportunities (Learning Activities): *How will the learning experience support or enhance the students' beliefs in their competence?* Personal Responsibility (Success Attributions): *How will the learners clearly know their success is based upon their efforts and abilities?*
Satisfaction
Intrinsic Satisfaction (Self-Reinforcement): *How can I provide meaningful opportunities for learners to use their newly acquired knowledge/skill?* Rewarding Outcomes (Extrinsic Rewards): *What will provide reinforcement to the learners' successes?* Fair Treatment (Equity): *How can I help the students in anchoring a positive feeling about their accomplishments?*

1.14 THEORETICAL FRAMEWORK BASED ON MEDIA RICHNESS THEORY

Media Richness Theory was applied to traditional organization media channels in the beginning but as new electronic media has become more common in organizations some of the explanations of appropriate channel selection and use came into the picture (Carlson & Davis, 1998; Dimmick, Kline, & Stafford, 2000; Ngwenyama & Lee, 1997; Papacharissi & Rubin, 2000). This issue poses a problem for Media Richness Theory; however, using it as a theory that can be useful in the process of education is considerable.

In this study, the researcher will try to consider this theory in the educational process. In other words, the educational environment will be considered as an organization that this theory will be used in order to evaluate whether decreasing uncertainty and equivocality of information that there is in the process of learning and teaching has positive effect on learning performance and satisfaction or not. Therefore, the following research model is suggested.

Media richness can be interpreted as a pipe for the transmission of information based on the Media Richness Theory. The pipes come in different communication capacities and are produced at different costs. Thus, selecting the right pipe is very important in designing a capable delivery system. In education, even though learning is very much related to the person's use of instructional technology the suitability of technology has a direct effect on the learners' understanding process (Burns, Clift, & Duncan, 1990, cited by Sun & Cheng, 2007). From the viewpoint of Media Richness Theory, the medium used instead of instructional technology has its own usage expenditure and transmission capacity for information. Consequently media needs to be chosen cautiously. In addition, poor selection of media is both unsuccessful and uneconomical to learning performance. For instance, too much unnecessary multimedia

elements in instructional technology will distract a learner's attention and confer no significant positive effects on learning (Bartsch & Cobern, 2003). Moreover, it will be costly to use high richness media such as cartoons to present the instructional technology with low level of certainty and equivocality.

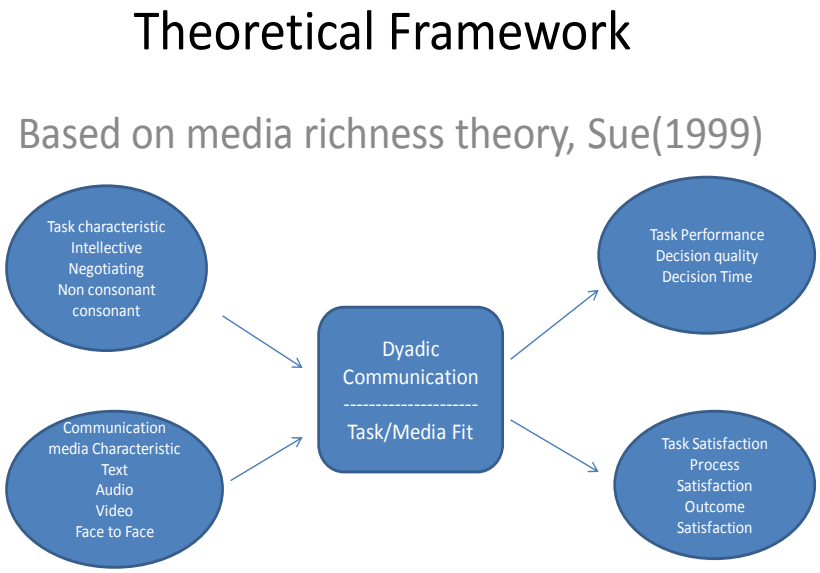

Figure 1.3: Theoretical Framework based on media richness theory. Source: Sue (1999)

1.15 CONCEPTUAL FRAMEWORK BASED ON MEDIA RICHNESS AND BLOOM TAXONOMY

As presented in the following figure (Fig. 1.5), the conceptual framework has been adopted from the old model of Media Richness Theory, as presented in Figure 1.4.

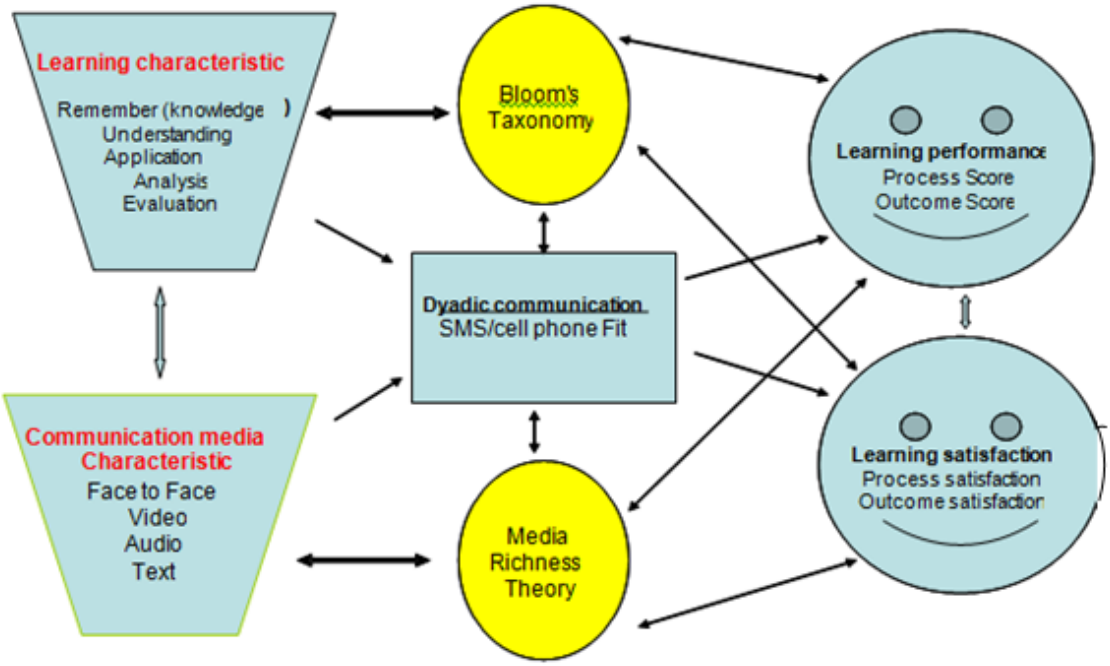

Figure1. 4: Conceptual framework based on media richness theory.

1.16 CONCEPTUAL FRAMEWORK BASED ON MOTIVATION THEORY

Figure 1.5 illustrates the conceptual framework of this study. The framework is based on Motivation Theory, Media Richness Theory and Bloom's Taxonomy, which are seen as influencing learning performance and learner satisfaction. Learning characteristics and communication media characteristics also influence learning performance and learner interaction through the dyadic communication being studied.

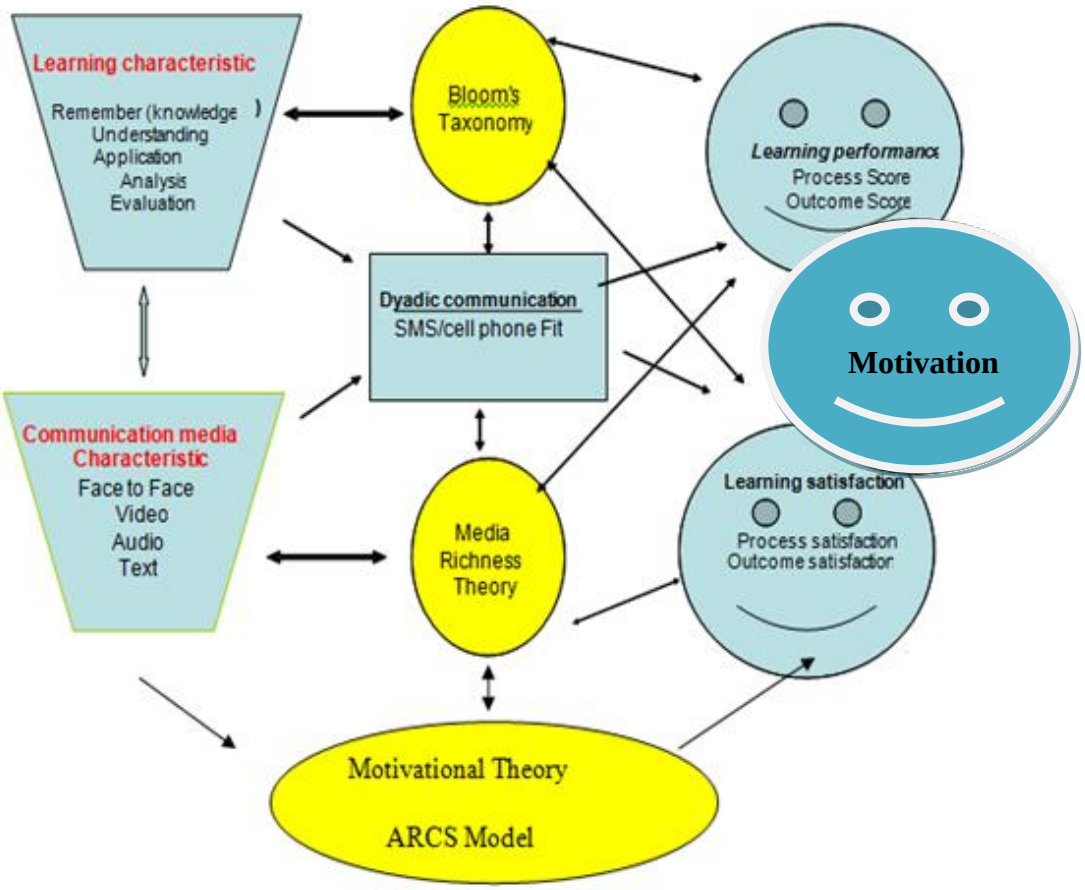

Figure 1.5: Conceptual framework based on media richness, bloom Taxonomy and Motivation theory.

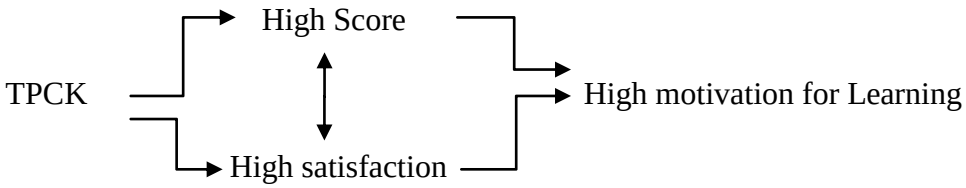

Figure 1.6: Conceptual of input and output.

From the quantitative aspect of this study, the integration of technology to content material (as modeled in Fig. 1.7 in the Technological Pedagogical Content Knowledge [PTCK] model) can act as an input and output model for this research that can promote the score and satisfaction amongst students. In this way, it is hoped that they can affect students' motivation towards better learning.

1.17 DEFINITION OF TERMS

This section provides an overview of the terminology used throughout this research.

1.17.1 DISTANCE LEARNING

Distance education has become the fashionable term to describe learning via telecommunications. The term telecommunications embraces a wide variety of media configurations, including radio, telephone, television (broadcast, wired, and satellite), and computers. As Heinich, Molenda, Russell and Smaldino (1996) have distinguished, distance education is a form of education characterized in the following manner:

- Physical separation of learners from the teacher.
- An organized instructional program.
- Technological media.
- Two-way communication.

One of the best forms presented by modern electronic technology is the ability to instruct without the direct physical company of the educator. It is clear that we cannot say instructional technology can or should bypass the teacher, but rather media tools can help change the role of the teacher to that of a creative manager of the learning experience as opposed to being merely a channel of information. In the present study, distance learning refers to the use of cell phones as a media for instruction. Since, there is no face-to-face relationship between the teacher and learner in this research, the term distance learning is used.

1.17.2 INSTRUCTION

Instruction is the arrangement of information and environment to facilitate learning. In this sense, the term environment refers not only to where the instruction occurs but also to the methods, media and tools needed to transmit information and lead the learner's study.

The arrangement of information and environment is normally the responsibility of the trainer and the designer of media. The choice of the strategy of instruction determines the environment (the methods, media, equipment and facilities) and the way information is assembled and used, as will be discussed later. The instructional approach can range from teacher control to learner control. But we must remember that even with methods and media that encourage students to take control of learning, some guidance is inevitably built in. The teacher has a dominant role in the instructional planning process. Working with other teachers and media specialists, the teacher can join together media into their training to greatly strengthen its contact on the student. In this study the means of instruction is whatever is taught by the teacher during the study.

1.17.2 INSTRUCTIONAL COMMUNICATION

As already mentioned, instruction is the arrangement of information and environment in order to facilitate learning. The transmission of information from source to a destination is called communication (Smaldino, Russell, Heinich, & Molenda, (2005).

Since fresh learning usually depends on taking in new information, effective instruction cannot take place unless communication takes place. Therefore, it is helpful to know something about the communication process so that instructional media can be used effectively. For the purpose of this research, instructional communication is considered text messaging (SMS) between the teacher and students.

1.17.3 TECHNOLOGY

Rogers and Shoemaker (1971) have posited that technology is the complete and organized use of behavior and physical science models and other knowledge to the answer of problems. In support of this definition, the following points should be considered:

1. Technology is value free; its use or misuse depends on the values of those who employ it.
2. The application of technological solutions to one problem may create other problems which may be more serious than the original problem.
3. The application of technology should be selected and /or continued only after determination that desirable consequences outweigh undesirable consequences.
4. Fear and hesitancy about using advanced technologies is largely a fear of unknown consequences.

In order to be supportive of appropriate technologies, individuals must possess an awareness of their availability, which should then lead to a hopeful interest in them so that they must accept them as part of daily use. It is safe to say that most teenagers possess and enjoy using mobile phones; thus, for the purpose of this research technology use is limited to the use of cell phones.

1.17.4 INSTRUCTIONAL TECHNOLOGY

The term instructional technology is often used interchangeably with educational technology. However, instructional technology presents refinements that are lacking within the meaning of educational technology. Instructional technology is made up of things of learning – more formally defined as "the device and the material which are used in the processes of learning and teaching " (Armsey & Dahl, 1973, p. vii; as cited by Merrienboer & Krammer, 1987). Knezevich and Eye (1970) define instructional technology as "an effort with or without machines, available or utilized, to manipulate the environment of individuals in the hope of the generating a change in behavior or other learning outcome" (p. 16).

With instructional technology becoming more rampant the job of "instructional technologist" has emerged. An instructional technologist is a specialist in the learning process whose job is to help faculty members identify and define the objectives of instruction, plot learning strategies and evaluate overall results (Carnegie Commission on Higher Education, 1972, p. 71).

1.17.5 Technologies for Learning

The word technology has always had a variety of implications, ranging from simple hardware to a way of solving problems. With regard to technology being a medium for solving problems, Smaldino (1996) notes that the economist John Kenneth

Galbraith has defined it best by referring to it as being a "systematic application of scientific or other organized knowledge to practical tasks" (p. 19).

The idea of technology being a process is highlighted in the fact that instructional technology educational use consists of a theory and practice of design, development, utilization, management and evaluation of processes and resources for learning. The developers of programmed instruction called it a technology for learning. They believed that what was really important was the process of analyzing learning tasks, breaking them down into their components and then devising the steps necessary to help learner master those tasks at hand. The cell phones, while used for education, are considered technology for learning in this paper.

1.17.6 SCAFFOLDING

The term scaffolding, from an educational perspective, refers to a "process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts" (Wood, Brunner, & Ross, 1976, p. 90). An expanded definition by Graves (2003) notes that scaffolding can help students better complete a task under less stressful conditions. From their view, Pearson and Kamil (1991) hold scaffolding to be a temporary measurement that must be removed in order to allow students the ability and responsibility for completing tasks.

Five different kinds of scaffolding techniques, which can be used independently or integrated, have been identified by Hogan and Pressley (1997). These are: offering explanations, inviting student participation, modeling of desired behavior, inviting students to contribute and verifying and clarifying student understanding. With regard to the use of scaffolding in educational instruction, Byrnes (2001) notes that when implemented effectively they lead to a number of desirable outcomes.

Two major steps are involved in instructional scaffolding: (i) “development of instructional plans to lead the students from what they already know to a deep understanding of new material” and (ii) “execution of the plans, where the instructor provides support to the students at every step of the learning process” (Lange, 2002). The main facilitator for learning in this paper is cell phone; hence scaffolding refers to cell phone.

1.17.7 MEDIUM

A medium (singular form of media) is a canal of communication. Derived from the Latin word meaning “between” is a term used to refer to anything that carries information between a source and a receiver (Heinich et al., 1996). Examples include film, television, diagrams, printed materials, computers, and instructors. These are considered instructional media when they carry messages with an instructional reason. The purpose of media is to make communication possible. The intended media in this study will be mobile phones which will be carried by students in order to facilitate their learning.

1.17.8 MESSAGE

In any instructional situation there is a message needed to be communicated. It may be subject-specific material, directions to the learners about how to best proceed with their study, questions about the content at hand, feedback to help the learners, or other information. In the correlation between the message and the medium, the medium carries the message. It is essential that the teacher carefully select the medium to ensure that the message is clearly, and accurately, received by the learner. In this study, the message is whatever is written on the mobile phone sent by the instructor to the student in order to affect the student’s learning.

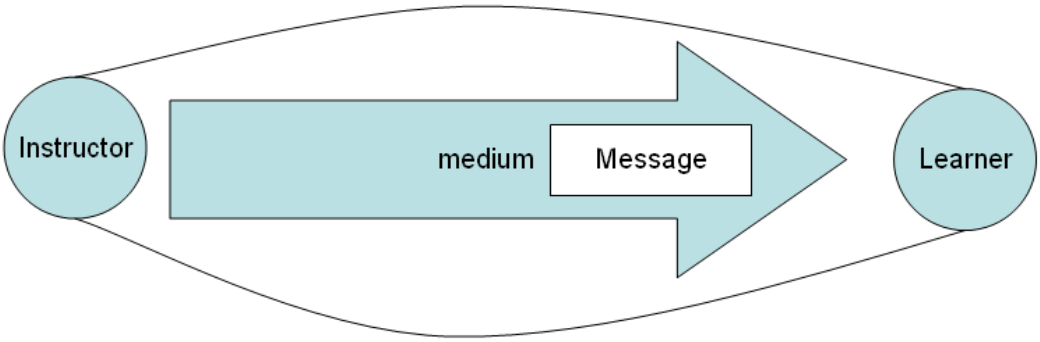

Figure 1.7: The role of Medium in Instruction

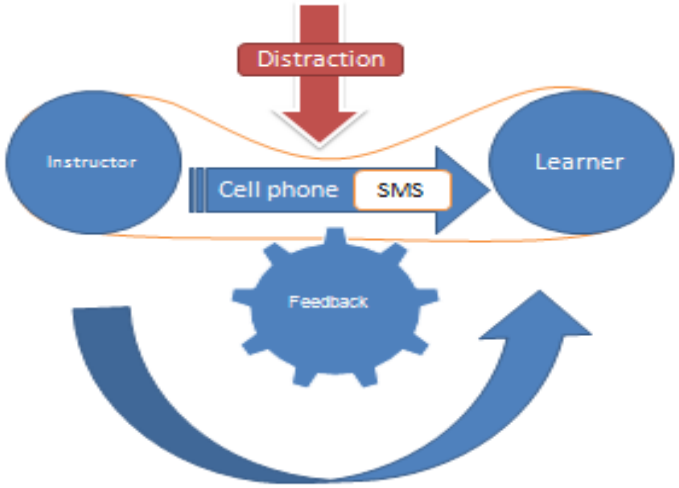

Figure 1.8: The role of medium in Instruction based on researcher design (modified form).

1.17.9 SHORT MESSAGE SERVICE (SMS)

In this study, an SMS is whatever the instructor types on the mobile phone and sends to the students in the experimental group in order to promote their learning of English vocabulary.

1.17.10 M-LEARNING

M-Learning provides the ability to create homogenous learning objects for heterogeneous mobile devices. This is accomplished by utilizing wireless connectivity. This approach benefits a growing audience of post-secondary institution and workforce learners; for example, those in hard to reach, isolated locations, away from their home or office, or in FTF (face to face) environments where a need to augment the classroom experience exists (Williams, 2009). The start of M-Learning created an environment of anywhere, anytime learning. In this present study, M-learning takes the form of text messaging via cell phones. In detail, SMS learning has been considered as mobile learning because of following reasons:

New English vocabulary as a content of learning has been put inside interesting sentences and sent to students in the Experimental group by SMS (Short Message Service) science, mobile phone carry out the SMS; the learning by which has been created as a result of this phenomenon is called mobile learning. Mobile learning can occur when someone is moving for instance during travelling and has content of learning available on the mobility devices such as cell phone, laptop, Palm top and tablet and so forth.

1.17.11 STUDENT SATISFACTION

Student satisfaction is defined as a positive or negative emotion about student learning (Hallenbeck, 1978). In this study, student satisfaction will be measured on a five point Likert scale with one representing no satisfaction to five equating to a high level of satisfaction.

1.17.12 VOCABULARY KNOWLEDGE

It is obvious that vocabulary knowledge is very important and there is agreement about this issue (Alderson, 2000; Anderson & Freebody, 1981), but it is very

controversial among many researchers with regard to what it means and what kind of knowledge it is. In the most general sense vocabulary knowledge is the ability of matching the printed form of a word to its meaning. Richards (1976) put forth a definition of vocabulary knowledge where he tried to consider all aspects: morphological, syntactic properties and word frequency. That definition, however, was not perfect because it fails to consider pronunciation and spelling. An earlier definition by Cronbach (1942) defines vocabulary as the awareness of word meaning and in addition the level of somebody can access to the knowledge. However, Qian (2002) notes that this definition is also incomplete because it does not consider the other aspects of lexical knowledge; such as spelling, morpho-sytactic properties and pronunciation.

In response to the lack of an appropriate definition, Nation (1990) attempts to compensate by putting together a definition that includes all identified parts of the term vocabulary. Thus, he asserted that a person gaining vocabulary knowledge must understand receptive and productive knowledge and all aspects that are necessary for truly understanding a word such as forms, usage and meaning. In this case, a person has knowledge of a word. A few good definitions of vocabulary knowledge include Vygotsky (1986) who states that "a word without meaning is an empty sound, no longer a part of human speech" (p. 6), Grendel (1993) who asserts "knowing the meaning of a word" (p. 141); and Nation (2001) who points out "to cover all aspects of what is involved in knowing a word" (p. 26).

According to O'Malley, Chamot, Stewner- Manzanares, Russo, and Kupper (1985 b), language learning strategies are any set of operations, or steps, learners use to help acquire, store, retrieve or use information with ease. Bialystok (1978) maintained that language learning strategies are optional measures taken by learners to make most of information at hand in order to expand their language competence. In light of this she

introduced four types of language learning strategies: 1) formal practicing, 2) functional practicing, 3) monitoring, and 4) inferencing.

In this study the definition of vocabulary knowledge refers back to the students' word knowledge that they have learned before and during the treatments. The vocabulary in this research will be chosen from the instructional material book of English for grade III in the Iranian school. Grade III is the last level of common education in Iran and it is considered as the most important level due to its following entrance level into university.

1.18 LIMITATIONS OF THE STUDY

During this study a few limitations should be addressed by the researcher. First of all, the selection of population and sample are limited to one school and two classes because of the research design (quasi experimental design) and the number of participants in the study sample. The reason refers to the fact that there is just one Iranian school in Kuala Lumpur, Malaysia, and the researcher has no other choice. Aside from the research being limited to one location, the population sample is also limited to just two classes in each grade; which may make the results of this study hard to generalize. This issue may affect the results of the study. In addition, the results of the study cannot be generalized.

Second, those who have been selected for the experimental group were not selected randomly because the experimental group must have cell phones so that group members can receive SMS text messages from the instructor. Another serious limitation of the study is the lack of standardized psychological instruments (questionnaire) for effectively measuring learning satisfaction amongst participants. For this reason, the researcher will have to make up the questionnaire himself (adopted from Tuckman, 1999; see Appendix 8). Since this is the first time this kind of study has been proposed,

there is no standard questionnaire to use in the research. The questionnaire designed for this research was run through a pilot study in order to gauge its validity.

1.19 SUMMARY

This chapter first presented the background of the study. This was followed by the statement of the problem and objectives of the study. In line with the objectives, the research questions were outlined. The theoretical and conceptual frameworks of the study are discussed afterwards. Finally, the definition of key words was presented. The next chapter will provide a review of the literature.

CHAPTER II

LITERATURE REVIEW

2.1 INTRODUCTION

In current society, the fast development of wireless communication devices in conjunction with their rampant popularity are being applied and used across many fields such as GPS navigation, personal mobile communication, wireless monitoring system, mobile meeting and mobile learning. Mobile learning offers learners another method for study as it allows learning to take place through wireless tools that include mobile phones, personal digital assistants (PDA), or laptop computers. Mobile learning can take place anyplace, without any fixed place or time in everyday life. For instance, learners can carry their mobile device while traveling to improve their language abilities.

Learning is a lifelong process that happens within the confines of a traditional classroom or through real life experiences. However, as rapid change occurs it becomes more necessary for individuals to partake in more formal education in order to help them excel – especially in their career. However, it is not always possible for one to pursue formal continuing education due to the demands of life. This is where mobile learning can play a key role.

The literature review put forth here will provide an overview of the following 10 parts: (1) possible causes of the weakening standard of English, (2) types of ICT tools and their role in education, (3) benefits of utilizing ICT tools, (4) e-learning readiness and e-learning initiatives in Iran, (5) common ICT tools and applications used by teachers, (6) problems in English Language teaching and learning in Malaysian schools, (7) the need for technology and ICT integration in English Language teaching and learning, (8) pedagogy, ICT integration and using instant messaging (IM) for improving

vocabulary learning skills, (9) home-school partnership, and (10) a learning management system.

2.2 POSSIBLE CAUSES OF WEAKENING OF ENGLISH

2.2.1 LACK OF CONTACT

Many learners of the English language often have a hard time mastering the language due to lack of contact with the language. More often than not, individuals living outside English speaking societies tend to drop their use of the English language once they leave the classroom. Fairus (2003) asserted that results of the Malaysian School Certificate (Sijil Pelajaran Malaysia) show that the failure rate for English is always high and has ranged from 44.0% to 50.4% between 1999 and 2001. These outcomes are not encouraging and the lack of exposure to English is one of the main problems facing students in many rural schools.

2.2.2 LACK OF INTEREST AND MOTIVATION

Motivation has always been the key to successful learning, especially where language acquisition is concerned. Gardner and Lambert (1972) reported that integrative motivation contributes highly to the learner's success in acquiring a second language. When English is taught only as a one off subject in the bigger school session, and students are not having the learning enforced outside of the classroom, the chance that they will become intrinsically motivated declines. This lack of motivation is another reason for falling standards in English. All in all, students learn English because it is part of their course but there is neither real interest nor motivation to learn this foreign language. According to Liuoliene and Metinien (2006):

> *Learning motivation is a driving force in learning a foreign language; Students' wishes and needs to work independently depend on their motivation, attitude*

> *and responsibility. The higher the motivation, the more autonomous learning students want to have in the learning process* (p. 97).

In general, students in schools think it is not easy to keep their attention on English Language learning because English is not important for them but they need to pass it as a subject in their examination. On the other hand, as Hussein et al. (2002) posit, the teachers on their part are unable to maintain students' interest in continuing to learn English and to use the language once the examination has ended.

The importance of learner motivation has difficulties for obtaining methods and approaches scientifically. Generally we have relied on the compilation of individual experiences of educators and listings of outcomes from academic studies. The ARCS model developed by Keller (2007) focuses on Attention, Relevance, Confidence and Satisfaction in individuals. Numerous research studies have validated this model (e.g., Means, Jonassen, & Dwyer, 1997; Small & Gluck, 1994; Visser & Keller, 1990) and it has been used in many different countries and cultures in the world. As opposed to suggesting easy prescriptive answers to motivational problems, the ARCS model suggests a problem solving approach that shows the ways one can arrive at solutions suitable for a given position. The purpose of the model is to assist students who would like to study and develop in techniques that help them make satisfying lives that add something positive to their world. According to Keller (1997; as cited by Jafari & Ajideh 2012), satisfaction as the last part of the ARCS model in motivation theory can be more necessary among English learners.

2.2.3 SATISFACTION WITH LEARNING

One's satisfaction in the learning process is just as important as the learning process. If one is not satisfied with how or what one is learning then one's motivation declines. Satisfaction is defined as ''the pleasure or contentment that one person feels

when she/he does something or gets something that she/he wanted or needed to do or get'' (Collins Cobuild English Dictionary, 1999).

Stein (2004) posits that student satisfaction with course delivery is itself determined by the degree of structure in the course – meaning that the components of the course need to be outlined in such a way that students are aware of what is happening and their role in it. Only then will student satisfaction ensue.

With distance learning itself, Drennan, Kennedy, and Pisarski (2005) found that student satisfaction is influenced by positive perceptions toward technology and the students' higher role as autonomous learners. Drennan et al. (2005) also found that the personality characteristics that the student brings to the course can have a direct effect on satisfaction with the course.

Student satisfaction is often correlated with student achievement. However, Moore and Kearsley (2005) put forth that one's satisfaction is not necessarily linked with achievement. Yet, the important thing about satisfaction is that it is recognized as being important in order to give one the incentive to complete a task (Chang & Fisher, 2003). Furthermore, Bollinger and Martindale (2004) have stated that satisfaction is positively correlated with motivation, which is essential for student success.

In looking at student satisfaction with their higher educational experience through traditional classroom experiences, online courses and/or a hybrid of the two, student satisfaction is more often than not linked with their personal feelings of ability and understanding. Because teacher-student contact is rare in online learning, the Sloan Consortium, an association of institutions and organizations committed to quality online education, provides that student satisfaction is obtained when students are successful and pleased with their learning experience (Moore, 2009). This is comparable to the definition provided by Sweeney and Ingram (2001) who state that satisfaction is

achieved through a perception of enjoyment and accomplishment of the learning environment.

Student satisfaction can be classified into six categories: 1) faculty, 2) institution, 3) individual student factors, 4) interaction/communication factors, 5) course factors, and 6) learning environment factors. However, only five factors are recognized as being important factors of consideration when it comes to overall satisfaction with online learning. These factors include: 1) satisfaction with interaction with peers and instructors; 2) a match between actual and expected learning experiences; 3) satisfaction with advising, registration, and access to materials that is as good as that found on the traditional campus; 4) satisfactory orientation for how to learn online; and 5) outcomes of online learning that are useful for career and professional development as well as academic development (Moore, 2009)

In summary, the variables of interaction, course design and communication are linked with student satisfaction in online learning. Further, individual factors such as self-efficacy and desire to do well while working at one's pace also go a long way in promoting satisfaction with online learning. Moore recognized helpful results in conjunction with a satisfactory orientation in promoting one to do well in an online learning environment.

2.2.4 NEGATIVE ATTITUDES

The term "attitude" refers to the tendency to act or to be in a state of "readiness" to act (Gagne, 1985). Liuoliene and Metinien (2006) in their research results concluded that second and foreign language learning motivation was strongly linked to attitude. The higher the motivation, the more autonomous the students would be in the learning process. For those students who possess negative attitudes regarding the learning

process there will be a low level of motivation as well as a high possibility of failing to attain proficiency.

Tucker and Lambert (1973) have pointed out that a lack of cultural awareness leads to negative attitudes regarding the target language. They added that negative attitudes are common among school students towards English Language learning. In other words, a negative attitude is the main reason for the fast decline in English Language competency among students. Spolsky (1969) said "One of the most important attitudinal factors is the attitude of the learners to the language and to its learners" (p. 271). Studies done by Hamidah, Bee Abdul Karim (1996) have revealed that the attitudes of Malaysian students towards language and the culture of the English speaking people are negative. She added that similar negative feelings are noticeable amongst primary and secondary school students. Today, most of the community sees the acquisition of English as a necessary evil according to Gaudart (1987). These attitudes make it more complex for school children to have a natural need to acquire English. This enmity toward the study of the English language could be probably due to anti-colonial feelings built-up over decades of British rule (ibid.).

2.2.5 POOR ORAL COMMUNICATION SKILLS

Poor oral communication skills can pose a barrier for students attempting to acquire a second language. Jianing (2007) explained that three reasons discouraged Chinese students from talking in class; which were 1) the students were worried and scared of making errors, 2) the classroom environment was not supportive, and 3) the feedback of the listeners was not encouraging. English learners believe if they make mistakes or fail to use appropriate words to express themselves than they will lose face. Zhu (2003) reported that students were unwilling to speak English because they want to

keep themselves away from being laughed at. The panic of "losing face" prevents the students from speaking English in front of their peers.

A study done by Hutchinson (2001) at Hanoi College of Science (HCS) in Vietnam found many of the students felt that their learning experience was too exam oriented rather than "real world usage" oriented. Too much focus was given to enhancing the reading and writing skills while ignoring the listening and speaking skills (Bui & Schumaker, 2006). The results of this study showed that over three quarters of graduate students could not communicate verbally in English because of shyness, lack of vocabulary and a lack of basic knowledge. As a result, most of them wished that they had been taught speaking skills more appropriately at university (Bui, 2004). During teaching, Vietnamese was mostly spoken, not only by the students but also by the teachers themselves. The classroom failure to create an appropriate English learning environment further decreased students' oral proficiency.

Gorlach (1995) stated that in the case of HCS, the average class size ranged from 30 to 50 students; for teachers it was hard to organize activities allowing students to practice speaking. As a result "Over-sized English classes make speaking lessons stiff and unmoving" (Bui, 2004, p. 28). In addition, these English classes were often teacher-dominated. For example, teachers speak whilst students listen and take notes -- a format seriously lacking in communication. Many studies have implied that teacher-dominated classes in place of learner-centered classes stop students from practicing oral skills efficiently (Westgate ,Batey, Brownlee, Butler., 1985; Edwards, 1987; Pace, 1992).

2.3 THE ROLE OF ICT TOOLS IN EDUCATION

The learning and teaching of English as a lingua franca in the 21st century have been obviously transformed in the era of globalization and technological development (Block & Cameron, 2002). The possibility of interaction and mobility among people

around the world has been dramatically increased by new technologies and ICT tools, which have helped overcome many barriers of time and space. The ICT tools are like power to be considered as they have modified many features of our lives. For example, in the fields of medicine, tourism, travel, business, law, banking, engineering and architecture the impact of ICT tools for the past three decades has been remarkable. According to Oliver (2002), the way these fields function today is enormously different from the ways they functioned in the past. However, in the field of education, there appears to have been a lack of manipulation that has resulted in far less change as compared with other fields. Oliver and Towers (2000) came out with factors that have reinforced moves to integrate ICT tools into classroom teaching and learning. These factors consisted of a rising need to discover efficiencies in terms of content delivery, the chance for elastic delivery prepared by ICT tools, the ability of technology to support customized educational programs to gather the needs of individual students and the rising use of the Internet and World Wide Web as tools for information access and communication.

Currently, ICT tools are influencing and supporting what is being learned in schools, colleges and universities and also supporting modifications to the student learning approach. Modern learning situations now push students to accept responsibility for their own learning, support autonomous learning and provide for individual learning styles. Barron (1998) claimed that ICT tools provide many opportunities for constructivist learning through their provision and support for resource-based student-centered settings in order to enable learning related to the context and practice. In short, ICT tools are continuing to play an ever-increasing role in distance education programs.

Young (2002) depicted that e-learning has been made feasible by ICT tools. As students are realizing their ability to partake in “anywhere-anytime” education, the

availability of e-learning has expanded ten fold. This in turn has provided learning opportunities to those constrained from partaking in traditional learning opportunities. Among students of all levels, web-based learning is expanding. From the teaching perspective, the web, and its associated technology, represents a new delivery channel for transmitting education and learning but it must be developed so that students eye education as a lifelong journey where they can be guided by the need for self-discovery and personal goals.

Rosenberg (2001) has stated that the benefits of the web as a media in facilitating teaching and learning are well documented. The main attraction of the web is its ability to enable resource sharing. Lecturers and students across the world can access lecture notes and multimedia presentations via the Web. Cecez- Kecmanovic and Webb (2000) stated that asynchronous online discussion boards are increasingly being used in the web-based learning environment to help communications to support the shared construction of knowledge among members of the learning community. Findings by Phillips (2001), in a study involving 100 undergraduates who used the web to learn, download lecture notes, do exercises and quizzes showed positive comments from the point of an educational approach.

2.3.1 PEDAGOGY AND ICT INTEGRATION

Although the arrival of digital technology has significantly revolutionized routines and practices in many areas, their impact in teaching and learning has lagged behind (Johnson et al., 2006). The technological general changes have become more noticeable, but instead of pedagogical it has been basically infrastructural and the requirements of the instructors and the learners have been marginalized. Zhao (2003) reported that there is a trend to only consider the technology and not how it is used. Though recently teachers' desire to appropriately integrate technology in their teaching

has received plenty of attention. Mishra and Koehler (2005) formulated a new model on technology integration called the Technological Pedagogical Content Knowledge (TPCK). This model of technology integration in teaching and learning explained that developing good content needs a thoughtful interweaving of all three key sources of knowledge: technology, pedagogy and content. For effective technology integration, teachers needed TPCK as a framework to understand and describe the kinds of knowledge. At first, Lee Shulman (1999) described the idea of pedagogical content knowledge. Pedagogical Content Knowledge refers to the interweaving of content and pedagogy so that an understanding of how certain topics, issues and/or problems are organized, represented and adapted to suit the diverse needs, interests and abilities of learners. TPCK expands on those core ideas through the inclusion of technology. Understanding and negotiating the relationships among Technology, Pedagogy and Content are required for effective technology integration with subject matter. TPCK endeavors to obtain some of the essential qualities of knowledge required by teachers for technology integration in their teaching while bearing in mind teacher knowledge. In addition, the composite interaction of three primary forms of knowledge such as Content, Pedagogy and Technology is at the heart of the TPCK framework.

Jacobsen, Clifford and Friesen (2001) said that it was difficult to learn and teach with technology. The field of technology is constantly changing and all the advances can be overwhelming. Karsenti (2001) noted that many instructors hold general knowledge regarding ICT but lack the know-how or techno-pedagogical capability with which to integrate those technologies into their teaching practice. Therefore ICT integration in the teaching and learning process is something that must be taught to teachers through on-going training sessions.

Similar to student motivation being positively correlated to success, many studies have revealed the importance of positive attitudes for learning to use

technologies (Cox, Rhodes, & Hall, 1988). For one to succeed one must have the right attitude – and this is especially important in mobile learning where less contact is had with the teacher. Thus, there is a higher level of responsibility placed on the student to stay motivated to finish the course of study.

Computer anxiety is recognized as an issue that can prohibit motivation and affect teachers' ability to learn and integrate technology into the classroom. Rohmer and Simonson (1981) defined computer anxiety as "The mixture of fear, apprehension, and hope that people feel while planning to interact or while actually interacting with a computer" (p. 151). According to McInerney and Sinclair (1994) some students and teachers experienced reduced levels of computer nervousness at the last part of a computer training class while other students experienced continuing nervousness. With increased experience in using and working with computers the level of nervousness is reduced thereby enabling success in reaching goals. Thus, individuals' overall attitudes toward computers may improve as a result of well-planned instruction according to studies by Madsen and Sebastiani (1987), Woodrow (1992), and Kluever, Lam, Hoffman, Green, and Swearingen (1994).

Aside from teacher attitude, self-efficacy is an important aspect to consider as well. According to research done by the Office of Technology Assessment (1995), educators may have affirmative attitudes towards technology but do not consider themselves qualified to teach with it. Teachers must have confidence about using technology if they wish to properly integrate it into their classroom teaching. Perceived self-efficacy is defined as follows:

> *People's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned not with the skills one has but with the judgments of what one can do with whatever skills one possesses* (Bandura, 1986, p. 391).

Hands-on computer experience can be an important component when helping to build self-efficacy in teachers' technology use. For this reason, it is essential that training be provided to teachers to help them develop the necessary skills to be able to effectively adopt technology use in the classroom. A study conducted by Moseley (2000) examined the attitudes of a small group of teachers who taught using ICT. Their findings found that teachers who successfully used ICT had the following characteristics:

- Strong positive relationship between teachers who have positive attitudes towards ICT and positively disposed towards using it in the classroom.
- Pupil choice rather than teacher direction. It means that teachers tended to rate their own competence as low and made use of helpers with ICT.
- Student enabling as learners instead of pupils receiving instruction; there is a high preference for independent studying.

According to Beaudin and Hadden (2005), from the academic attitude, it is obvious that the empowerment ICT can bring is best suited to teaching which also makes the learner powerful. This can bring complexities for teachers who feel challenged by the loss of control brought about by a high level of pupil autonomy. Cloke and Sharif (2001) said that challenges to "school knowledge" accompany ICT use as students obtain information outside of the classroom via ICT.

Beaudin and Hadden (2005) reported a successful technique of making the modern learning environment for learner-educators to discover technology and invent inventive and significant methods to combine technology into their teaching and learning procedure in their future classroom. Paris, Lipson, and Wixson (1983) said that there were three components that develop techno-pedagogically skilled teachers as follows: 1) meta-teaching, 2) technology exposure, and 3) critical reflection.

Meta-teaching pedagogically allows teachers to develop a holistic understanding of the process of teaching with technology. The instructional use of technology fosters different forms of knowledge. For example, cognitive and developmental psychologists have examined types of knowledge that modify as students proceed from an intermediate level to an advanced level. They have also highlighted three main types of knowledge: declarative knowledge (knowing that), procedural knowledge (knowing how) and conditional knowledge (knowing when and why). With meta-teaching teachers are forced to think about the "why" questions regarding teaching with technology. Questions such as: Why is this technology suitable for achieving learning results? Why is this technology likely to advance student learning? Is there a positive modification in student learning as a result of technology use? At the heart of the TPCK framework is the complex interplay of three primary forms of knowledge: Content, Pedagogy and Technology (detailed in Figure 2.1).

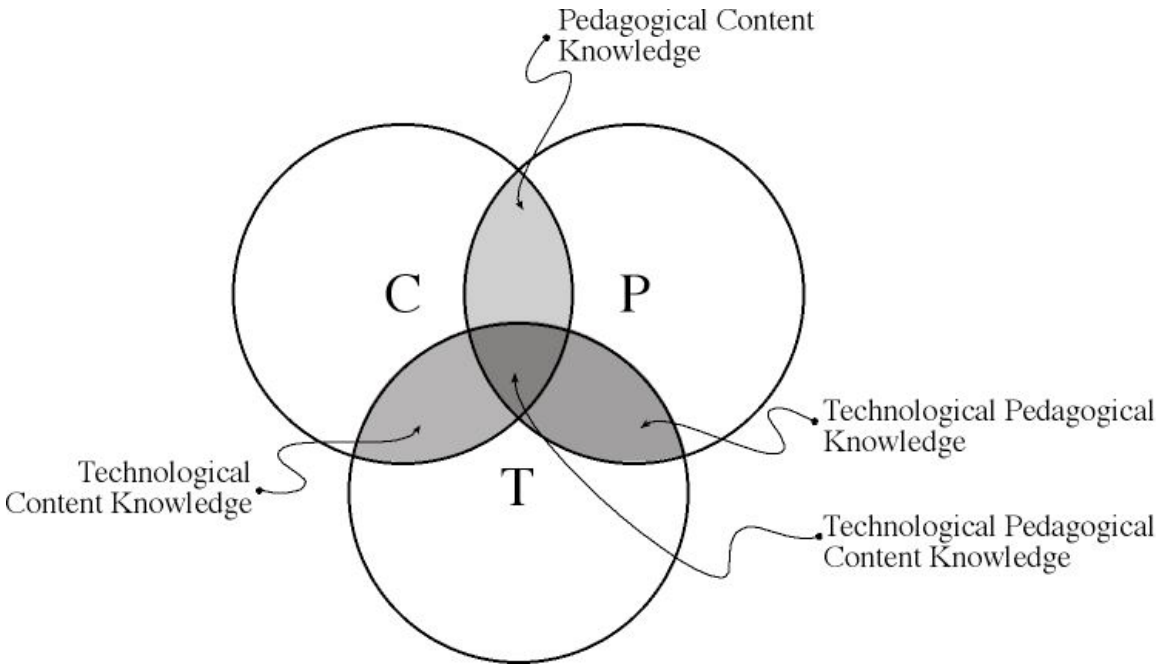

Figure 2.1: Pedagogical Technological Content Knowledge. (Mishra & Koehler, 2003)The three circles Content, Pedagogy and Technology overlap to lead to four more kinds of inter-related knowledge (Mishra & Koehler, 2005, p. 132)

Learning and teaching with technology is hard and can be quite overwhelming. The basic learning process happens when teachers start to imagine about what they are doing when using technology for teaching and learning – this leads into the thinking process. Within this thinking process, teachers may reflect on the following questions: Is this the best approach? Does this technology improve teaching and learning? Did student learning get better? How do I know that learning has occurred due to technology use? How was the level of student commitment influenced by the blend of technology?

Gjorling (2005) has stated that the mixed method of meta-teaching, technology exposure and critical reflection prepare technology pedagogically skilled teachers. Integrating ICT in teaching and learning is important and teachers are required to learn how to apply ICT as a pedagogical device. According to Almas and Nilsen (2006), experimental studies carried out in Norway support the view that ICT as a new tool can improve the teacher's pedagogical supply.

2.3.1.1 The Efficiency of ICT Integration

McDougall (2001) proposed that there are two different viewpoints of ICT effectiveness that can be evaluated. The first is check up ICT as an enhancer of conventional education using experimental and control groups. The other is consideration of education accompanied with ICT as being different requiring calculations to be conducted for comparisons.

The following review of ICT efficiency utilizes a similar approach, looking at meta studies to assess the evidence drawn from the experimental tradition. It also observes descriptive studies that have a similarity.

Sivin-Kachala and Bialo (1998) found a positive increase in educational attainment by students utilizing computers. A Finnish based study by Sinko and Lehtinen (1999) indicated that ICT has a positive effect on education. A number of

other descriptive researches were reviewed and a summary of their researches is that ICT can achieve better student learning results (Becta, 2001a, 2001b; Mann, Shakeshaft, Becker, & Kottkamp, 1999); the impact of ICT relates very much to educators (Wenglinsky, 1998); ICT is not used to its fullest potential in schools and education can be individualized by ICT (Pisapia et al., 2000). These results highlight the point that in teacher professional development, ICT should be efficiently added in the teaching and learning of English the language.

2.3.1.2 School-Home Partnership

According to Shartrand et al. (1997) for the children's cognitive, emotional, social and physical growth and development schools are not the only institutions responsible. Schools are just one part of the equation in helping to instill knowledge in students. In order for schools to succeed, they need help from other forces, namely parents, who also wish to instill the same knowledge in students. Schools must face the challenges of working with parents as co-partners to make available the necessary education and support that the children require.

Epstein (1995) revealed that school-family partnerships contribute highly to the instruction of children. Viewing the major role of parents and families in the West, there is a need for Iranian schools to welcome parents to adopt concrete responsibilities in supporting their children in their learning process. At this time, in some countries, parent participation is only via the Parent-Teacher Association (PTA) platform (Wee, 1995). Parents' participation should not be limited to serving as committee members in the PTAs, but they should help their children through home-based education actions.

Parental support can help pave the way to a higher achievement level_especially in terms of language ability. By providing basic infrastructure facilities such as a laptop or a desktop computer with broadband connection at home, parents can support their children's learning. In fact, as Spencer and Hiltz (2003) observed, quality interactions

among teachers and learners and between the learners themselves are important for successful learning. According to Gass (2003) in English language learning, interaction is usually considered as a fundamental element of an interactive language learning process. ICT support presented by parents assists their children in improving English proficiency (Becta, 2002, 2004). In summary, the researcher wants to offer an integrated model of learning in supplementing classroom teaching and learning of English where the home environment plays a key role in the learning process.

2.4 PEDAGOGY ISSUES AND DESIGNING

Leinhardt and Greeno (1986), along with other researchers such as Spiro, Coulson, Feltovich, and Anderson (1988, 1991) recognized the process of teaching to be a complicated cognitive skill that takes place in an ill-structured and active environment.

Like capability in other complicated domains, the process of teaching is dependent on access to organized systems of knowledge. Shulman (1986), followed by Veal and Ma Kinster (1999), believed that knowledge bases of teacher education have centered on the content knowledge of the teacher historically. Ball and McDiarmid (1990) feel that in the current education system teacher education has shifted its focus to pedagogy where general pedagogical classroom practices are emphasized as independent from the subject matter and often at the expense of content knowledge. Figure 2.2 best illustrates this by displaying two autonomous circles that signify this bifurcated way of looking at teacher knowledge.

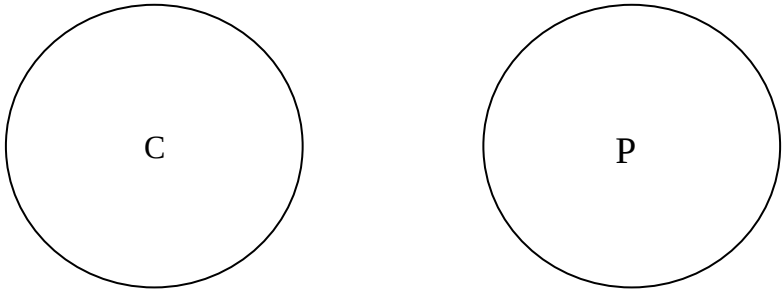

Figure 2.2: The Two Circles Representing Pedagogical and Content Knowledge.

For instance, different methods towards teacher education have emphasized either focus on content knowledge (C) or knowledge of pedagogy (P) – but not both together. Thus, Shulman (1986) established the idea of blending the two constructs together with his formation of pedagogical content knowledge (PCK). The formation of PCK was Shulman's way of addressing the fact that teacher education programs were choosing to focus solely on either content knowledge or pedagogy.

At the intersection of content and pedagogy is pedagogical content knowledge or PCK. Therefore, it goes above and beyond a simple reflection of content and pedagogy as being separate from one another. PCK represents the mixing of content and pedagogy into a uniform understanding of how special aspects of subject matter are adapted and organized to be passed on through instruction. Shulman asserted that ''pedagogical content knowledge'' is the content knowledge that faces to the teaching process, including ''the ways of representing and formulating the subject that make it understandable to others'' (p. 9). At the center of PCK is the mode in which subject matter is converted for teaching. This happens when the technology makes it available to students.

After Shulman some scholars such as Cochran, King and DeRuiter (1993); van Driel, Verloop, and De Vos (1998) have extended and critiqued the concept of PCK. They suggest that under the PCK method the materials become complicated. However, many others feel that PCK works well through its merging of content and pedagogy to

provide greater comprehension into how particular topics, problems or issues are arranged, adapted and represented to fit the diverse needs of large groups of students.

The idea of PCK since its introduction in 1987 has penetrated the researchers who cope with teacher education and the subject matter of education (Ball, 1996; Cochran et al., 1993; Grossman, 1990; Ma, 1999; Shulman, 1987; Wilson, Shulman, & Richert, 1987). It is valued as an epistemological idea that usefully mixes together the traditionally split knowledge bases of content and pedagogy. Shulman's contribution to the scholarship of teacher knowledge can be diagrammatically represented by connecting the two circles of Figure 2.2 in order that their intersection signifies PCK as the interaction between pedagogy and content (Figure 2.3). In Shulman's assertions, this intersection includes inside it.

> *The most regularly taught topics in one's subject area, the most useful forms of representation of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations—in a word, the ways of representing and formulating the subject that make it comprehensible to others* (Shulman, 1986, p. 9)

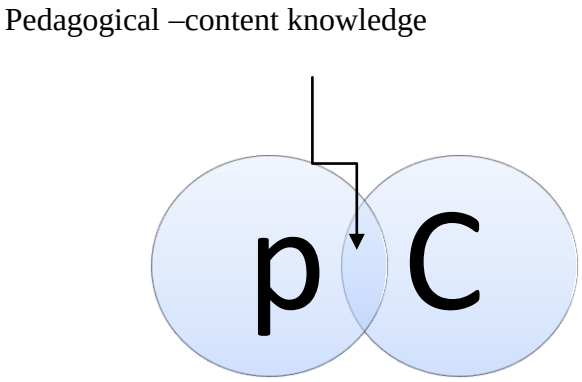

Figure 2.3: The Two Circles of Pedagogical Knowledge and Content Knowledge Are Now Joined by Pedagogical Content Knowledge.

Although Shulman did not argue technology and its correlation to pedagogy and content, it is not because he considered the issue to be insignificant or irrelevant. It needs to be noted, however, that during Shulman's formation of PCK technology was

not as salient as it is today. Many households lacked personal computers and the computers available then were mainly used for basic processing. The prominent technology utilized in Shulman's day consisted of: textbooks, overhead projectors, typewriters, charts, and so forth. The internet barely existed at that time. As a result, although Shulman's approach still holds true, what has altered since the 1980s is that technologies are in front of educational discourse mostly due to the accessibility of a variety of new, primarily digital, technologies and circumstances for learning how to use them in teaching. These innovative technologies integrate hardware and software such as computers, educational games, and the Internet and the countless applications supported by it.

New technologies have modified the classroom environment. The development of smart boards is one way many schools are helping to make classrooms more interactive and engage students in the learning process. Mishra and Koehler (2006) recognized that by bringing technology into the classroom learning experience students can take on a more active role in their learning than simply taking lecture notes and comparing them with their textbook. They are able to see examples of what is being learned and can compare these with multiple sources of knowledge on the same subject.

Learning beyond the traditional classroom method will be an obligation for teachers in order to apply presently accessible tools; learning new techniques and skills, as current technologies will be a requirement as well. In comparison to earlier conceptualizations of teacher knowledge, this is a very different context. Previously, technologies were regulated and comparatively stable. During the time, utilization of technology for pedagogical purpose was expected to continue without progress. Hence, teachers concentrated on the variables related to content and pedagogy and guaranteed that technological contexts would not change so much. In the past nobody could imagine that this new context would have pushed to the forefront the role of technology.

As a result, knowledge of technology turns into a significant part of overall teacher knowledge.

As Shulman recognized in the 1980s, current debates of the function of technological knowledge seemed to share many of the same problems. For example, prior to Schulman's seminal work on PCK, knowledge of content and knowledge of pedagogy were viewed as split and autonomous from each other. In the same way that knowledge of technology is now viewed as being detached from knowledge of pedagogy and content. This method can be shown as three circles, two of which (content and pedagogy) partly cover, as Shulman said, and one circle (technology) is separated from these two. Figure 2.4 shows the knowledge structures that underlie much of the present discourse on instructional technology. It means technology is considered as constituting a split set of knowledge and abilities that has to be studied, and the relationship between these skills and the tried and true basis of teaching (content and pedagogy) is nonexistent or viewed to be reasonably unimportant to obtain and apply.

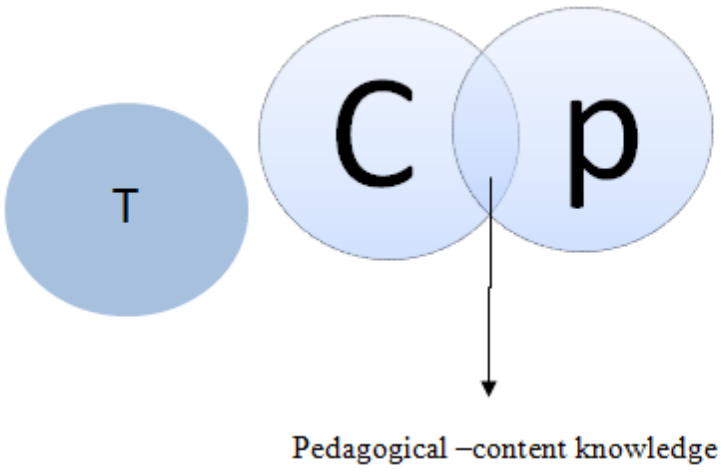

Figure 2.4: The Three Circles Represent Pedagogy, Content, and Technology Knowledge. Content and Pedagogy Overlap to Form Pedagogical Content Knowledge While Technology Is Seen as Being a Separate and Independent Knowledge Domain.

In contrast with the simple view of technology (Figure 2.4), the TPCK framework (Figure 2.5) highlights the connections, interactions, affordances, and constraints between and among content, pedagogy, and technology. In this model, knowledge about content (C), pedagogy (P) and technology (T) is found in the overlap (in the middle of the three circles) for developing good teaching. However, this model additionally highlights the complex interplay of these three bodies of knowledge, instead of treating these as split bodies of knowledge.

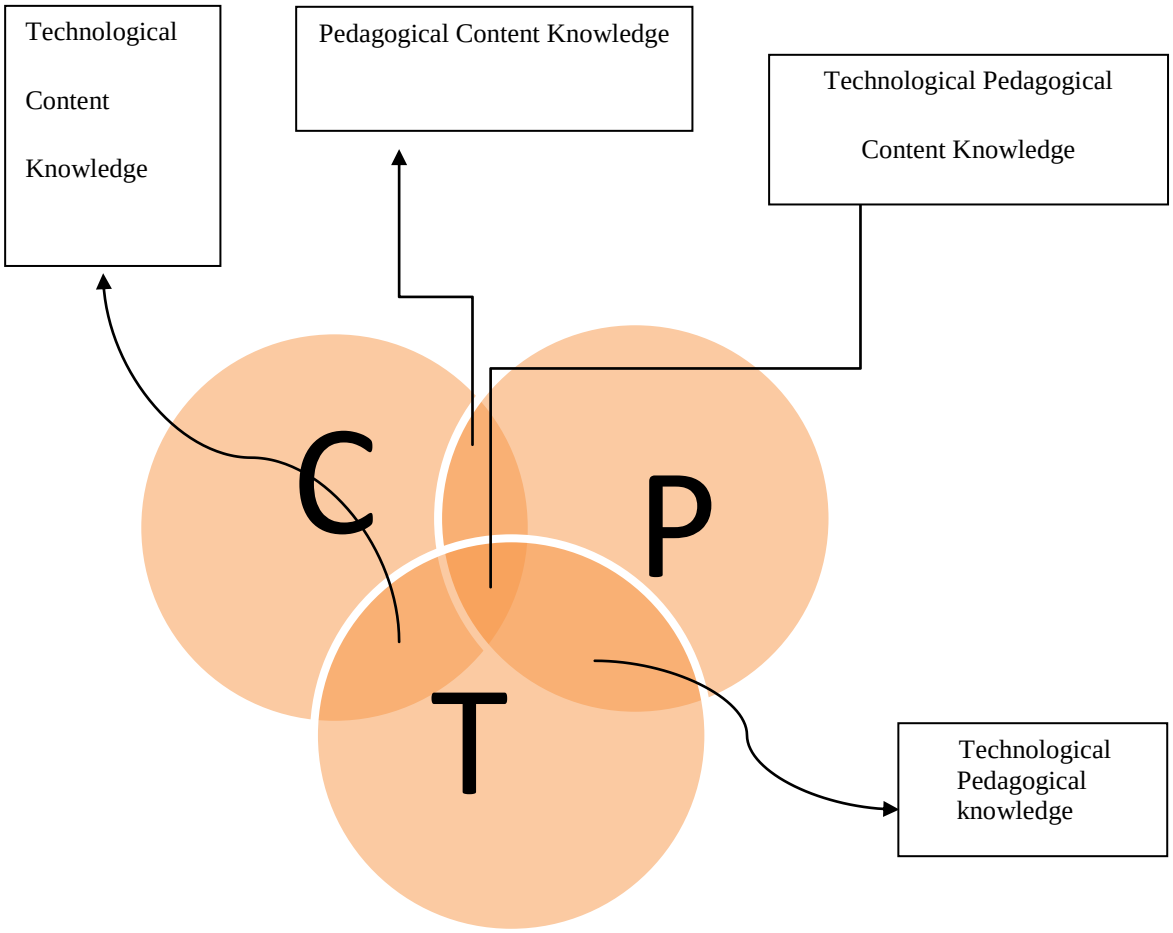

*Figure 2.5.*Technological Pedagogical Content Knowledge. The Three Circles, Content, Pedagogy, and Technology, Overlap to Lead to Four More Kinds of Interrelated Knowledge.

It is not believed that this TPCK method is absolutely new. Other researchers believe that knowledge about technology requires comprehension and awareness of how technology relates to pedagogy and content (Hughes, 2005; Keating & Evans, 2001; Lundeberg, Bergland, Klyczek, & Hoffman, 2003; Margerum- Leys & Marx, 2002; Neiss, 2005; Zhao, 2003).

What sets the method separately is the specificity of the expression of these associations between content, pedagogy, and technology. While being viewed as separate factors, we also have to view them in couples: pedagogical content knowledge (PCK), technological content knowledge (TCK), technological pedagogical knowledge

(TPK), and all three taken together as technological pedagogical content knowledge (TPCK).

With the integration of technology into content material as Technological Pedagogical Content Knowledge (TPCK), the quantitative side of this research views the integration of technology to content material and Technological Pedagogical Content Knowledge (TPCK) as the input and output of this research to promote scores and satisfaction among students. In this way, it is hoped that they can affect students' motivation for better learning.

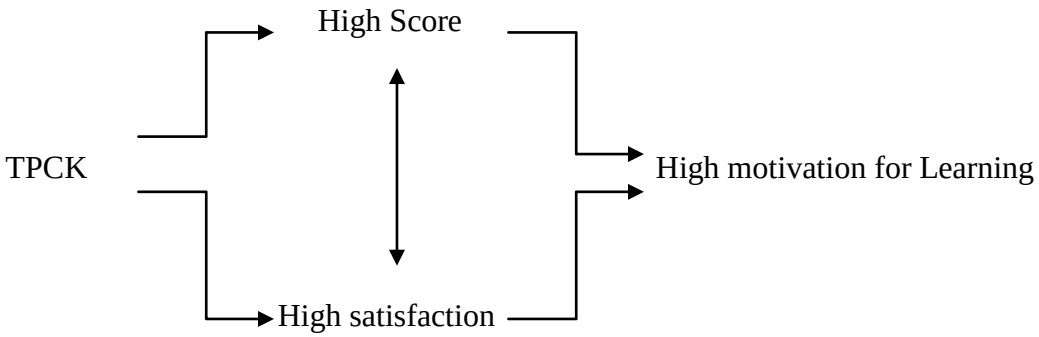

Figure 2.6: Conceptual model of input and output.

2.4.1 CONTENT KNOWLEDGE

Knowledge about the actual subject matter that should be learned or taught is called content knowledge (CK). It can never be argued that content knowledge is unnecessary. Teachers, of course, must know and recognize the subjects that they teach with enough confidence and knowledge to be able to pass on to learners the same clarity as they have on the subject. Teachers have to also know the personality of knowledge and investigation in diverse areas. For instance, as Ball and McDiarmid (1990) posed, how does a proof in mathematics vary from a historical explanation or a literary explanation? If Instructors do not have these perspectives, students cannot be able to justify those subjects.

2.4.2 PEDAGOGICAL KNOWLEDGE

Looking at the term “pedagogical knowledge” (PK), the term itself refers to deep knowledge regarding the processes and methods of teaching and learning while keeping in mind the overall education purpose. Specifically it examines techniques that can be used in the classroom, who the target audience is and strategies that can be used for evaluating learning and student comprehension. It also includes knowledge on how students create knowledge, acquire skills and develop habits of mind and how positive disposition toward learning is recognized by the teacher with deep pedagogical knowledge. In addition, pedagogical knowledge needs a comprehension of cognitive, social and developmental theories of learning and how they are used on students in their classroom.

2.4.3 PEDAGOGICAL CONTENT KNOWLEDGE

The concept of pedagogical content knowledge is similar to Shulman’s opinion of knowledge of pedagogy that is relevant to the teaching of particular content. Thus, it focuses on knowing which teaching techniques fit the content and how elements of the said content can be arranged in order to provide better teaching. PCK is concerned with the symbol and formulation of concepts, pedagogical techniques, knowledge of what makes concepts difficult or easy to learn, knowledge of students’ past knowledge and theories of epistemology. It also engages knowledge of teaching approaches that integrate suitable conceptual representations to deal with learner difficulties and misconceptions and promote meaningful understanding. Knowledge of what the students take to the learning position, knowledge that may not be either useful or not practical for the specific learning task at hand is also included. This knowledge of students comprises their approaches, previous ideas (both ‘‘naıve’’ and instructionally

produced), misconceptions that they are likely to have about a specific domain, and possible misapplications of previous knowledge (Mishra & Koehler, 2006).

2.4.4 TECHNOLOGY KNOWLEDGE

Technology knowledge (TK) is knowledge about standard technologies, such as books, chalk and blackboard and more advanced technologies, such as the Internet and digital video. This includes the abilities needed to manage specific technologies. In the case of digital technologies, this comprises knowledge of operating systems and computer hardware and the skills to employ the standard sets of software devices such as word processors, spreadsheets, browsers and e-mail. TK comprises knowledge of how to set up and take away unimportant tools, install and remove software programs and make and archive documents. The majority of standard technology workshops and tutorials concentrate on the gaining of such abilities. Since technology is constantly changing the character of TK also requires shifting with time.

2.4.5 TECHNOLOGICAL CONTENT KNOWLEDGE

Knowledge about the way technology and content are equally related is technological content knowledge (TCK). Educators require knowing not only the subject matter they teach but also the way subject matter can be modified by using technology; for instance, Geometer's Sketchpad as a device for teaching geometry allows learners to play with figures and forms, and makes it simpler to create standard geometry evidence. In such a case, what was done formerly when learning geometry the software program can only duplicate. Nevertheless, the computer program does more than that. By permitting students to ''play'' with geometrical creations, it modifies the nature of learning geometry itself; proofs by creation are a shape of representation in

mathematics that were unobtainable previous to this technology. The same things can occur for other software products.

2.4.6 TECHNOLOGICAL PEDAGOGICAL KNOWLEDGE

Technological pedagogical knowledge (TPK) is knowledge of the existence, components and capacities of different technologies while they are applied in teaching and learning situations, and in opposition, identifying how teaching may modify because of using specific technologies. This might contain a comprehension of devices existing for a specific task, the capability to select a device based on its fitness, approaches for using the tool's affordances and knowledge of pedagogical plans and the capability to use those approaches for employing technologies. This comprises knowledge of devices for keeping class records, presence, and grading, and knowledge of generic technology such as Web Quests, discussion boards and chat rooms.

2.4.7 TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE

Technological pedagogical content knowledge (TPCK) is an urgent shape of knowledge that moves beyond all three parts (content, pedagogy and technology). This knowledge is dissimilar from knowledge of a disciplinary or technology specialist and also from the general pedagogical knowledge shared by teachers across disciplines. TPCK is the basis of good teaching with technology and requires comprehension of the representation of conceptions applying technologies; pedagogical methods that use technologies in positive methods to teach content; knowledge of what makes ideas hard or simple to learn and how technology assists in resolving some of the problems that students face; knowing about students' previous knowledge and theories of epistemology; and knowing about how technologies help to create an existing knowledge and to expand new epistemologies or reinforce old ones.

According to Marks (1990) TPCK ‘‘represents a class of knowledge that is central to teachers’ work and that would not typically be held by non-teaching subject matter experts or by teachers who know little of that subject’’ (p. 9). About TPCK, Mishra and Koehler (2006) said that:

> *TPCK represents a class of knowledge that is central to teachers’ work with technology. This knowledge would not typically be held by technologically proficient subject matter experts, or by technologists who know little of the subject or of pedagogy, or by teachers who know little of that subject or about technology* (p. 1029).

Hence, the model of technology incorporation in teaching and learning asserts that developing good content needs consideration of interweaving all three key sources of knowledge: technology, pedagogy and content. In this argument, the main thing is that it cannot be said that there is a single technological solution that works for every teacher, every course, or every sight of teaching. Quality teaching needs to increase student comprehension of the complex associations among technology, content and pedagogy while applying these comprehensions in such a way as to expand suitable, context-specific approaches and representations. Incorporation of creative technology in teaching requires including all three parts inside the complex associations in the system not in separation, as described by the three key components.

2.4.8 APPLYING THE TPCK FRAMEWORK TO PEDAGOGY

How are teachers to understand the complex relationships among content, pedagogy, and technology? The standard approach proposes that teachers simply be required to utilize technology. Underlying this approach is a view of technology that sees it as being a universally appropriate skill. Obtaining essential ability with hardware and software packages can complete unlocking the power and potential of technology. This method is illustrated by the multiple sources of state and national technology standards that have been applied newly and that highlight improving teachers’

knowledge of modern versions of hardware and software (CEO Forum on Education and Technology, 2000; Handler & Strudler, 1997; Hirumi & Grau, 1996; National Council for Accreditation of Teacher Education, 1997; U.S. Congress Office of Technology Assessment, 1995; U.S. Department of Education, 2003; Wiebe & Taylor, 1997; Zhao, 2003). It is hoped that through demonstrating their ability with current software and hardware teachers will be capable of effectively integrating technology into their classrooms.

Due to the initiatives by officials, teacher educators and technology fans, many workshops are now being offered to provide teachers with the necessary education about general software devices that are functional in both content and pedagogical contexts. Standard procedures of teacher professional development or faculty development, like workshops or standalone technology courses, are based on the vision that technology is self-contained and highlight this split between how and where skills are learned (for example, workshops) and where they are to be used (such as, classrooms). This is somewhat similar to the kind of knowledge representation shown in Figure 2.4.

The majority of researchers working in this area have the same opinion that traditional methods of teaching technology to teachers (mostly through workshops and courses) are ill suited to endow them with a deep understanding that can help them become clever users of technology for pedagogy (Brand, 1997; Milken Exchange on Education Technology, 1999; U.S. Department of Education, 1999). Teachers tend to construct their knowledge too narrowly and generally in order to use specific software packages. Since advances in technology occur at a very rapid pace these days, the importance of on-going, hands-on training cannot be stressed enough.

However, it should be noted that the majority of software devices obtainable today are developed for the world of business and work – not education. Thus, Zhao

(2003) asserts, most software devices are unable to overcome these pedagogical problems and adapting these general devices for classroom teaching is neither unimportant not clear.

Context-neutral approaches for incorporating technology support broad solutions for teaching. However, technology use in the classroom is context bound and dependent on the subject matter, grade level, student background and the kinds of computers and software programs obtainable; it is not argued that such generic uses are never helpful. However, despite precious general uses of technology (such as grade books), such methods cannot be completely useful for utilization of technology in teaching a specific subject. In conclusion, such generic solutions cannot assess teachers, their experience, teaching style and philosophy by supposing that all instructors educate using the same method and therefore would employ technology the same way.

For instance, according to Whitehead (1953), it is argued that workshops to educate on specific hardware or software packages guide to the gathering of inert facts as opposed to knowledge integration or application. Kent and McNergney (1999) asserted that teachers have often been requested to use these abilities in their own classrooms by themselves, generally through trial and error. Although part of the problem is lack of time and money as a resource, it is believed that there are deeper and more inflexible issues related to values, goals and methods that require addressing in order to provide suitable and helpful ways for teachers to incorporate technology in their classrooms.

In terms of the TPCK framework, context neutral approaches are most likely to be unsuccessful because of the exaggerated technology skills (the ‘‘T’’ in the model) lacking developing pedagogical technology knowledge, technological content knowledge or technological pedagogical content knowledge. In addition, simply knowing how to employ technology is not equal to knowing how to train with it. A

survey by the Milken Family Foundation and the International Society for Technology (ISTE) revealed that teacher-training plans ordinarily do not make available future teachers with the kinds of experiences necessary to get ready them to use technology successfully in their classrooms (Milken Exchange on Education Technology, 1999). Particularly, they asserted that formal standalone IT coursework cannot be associated well with technology skills and the teachers involved are not capable of merging technology with the teaching processes. Thus, they suggested that teacher preparation programs increase the level of technology integration in their own academic syllabuses.

More current benchmarks, like those of the International Society for Technology (ISTE) and the National Council for Accreditation of Teacher Education (NCATE, 1997, revised in 2001), have parted from a highlighting on just basic skills and have counted a series of higher order objectives essential for effective pedagogy with technology (Glenn, 2002a; Handler & Strudler, 1997; Wise, 2001). The rich, complex, and situated perspective that has been proposed clearly requires development of very different approaches for teachers. A consideration of the current teacher education research concerning technology will demonstrate several examples of teacher education programs that have employed educational technology in ways that encourage a mixed-method teaching syllabus (for examples see Fulton, Glenn, & Valdez, 2003; Fulton, Glenn, Valdez, & Blomeyer, 2002; Hacker & Niederhauser, 2000; Loucks-Horsley, Hewson, Love, & Stiles, 1997; Niederhauser, Salem, & Fields, 1999; Niederhauser & Stoddart, 2001; Strudler & Wetzel, 1999). In addition, learning technology by design also can be capitalized on the idea of involving teachers in real problem solving with technology.

2.4.9 CONCLUSION OF TPCK

Successful technology integration can create an effective and enhanced classroom as an integral component. Yet in order to achieve successful technology integration, teachers must decide what is the most effective way to integrate technology into their classroom. The key is to properly integrate it without relying on it to become the sole means of passing knowledge.

2.4.10 LEARNING TECHNOLOGY BY DESIGN

Brown and Campione (1996) illustrated that good curricula are not sets of separated pedagogical parts, but rather should function as logical systems. Most failed curricula attempt to organize different sets of items, often because of a lack of foundational framework that explains the underlying principles of learning and knowledge structure. Having a strong framework to guide curriculum development is the key. Therefore, it can be argued that the TPCK framework provides a good template for teachers to follow in creating technology blended learning experiences.

As the teaching approach is developed, it is pursued that the design of instructional technology signifies a genuine background for teachers to learn about instructional technology. Because design-based activities make available a rich environment for learning and lend themselves to sustained inquiry and modification, it is thought that they were suitable to assist teachers in developing the deep understanding required to apply knowledge in the complex domains of real-world practice. This highlighting on design has been notified by ancient research on the employ of design for learning complex and interrelated ideas (Brown, 1992; Blumenfeld et al., 1991; Harel & Papert, 1990, 1991; Kafai, 1996; Kolodner, 2002; Perkins, 1986). A nice bridge to many of the models of project-based learning can be made by design-based activities (Blumenfeld, Marx, Soloway, & Krajcik, 1996; Blumenfeld et al., 1991;

Dewey, & Bentley, 1949; Papert, 1991; Roth, 1995; Roup, Gal, Drayton, & Pfister, 1993).

A Learning Designer should be a practitioner, although for the length of the course not just by learning about practice. Learning through design exemplifies a procedure that is effective for creating artifacts (such as online courses, digital videos, and so on), located in the intersection between theory and practice, between designer on one side and materials and audience on the other side.

Learning technology by design gives students the chance to rise above the passive learner role and to take control of their learning. In addition, the progress to design-based activities has implication for educators. In usual ways design cannot be taught; design is skilled activity, and it depends on recognition of design quality, entails a creative process, is implicated in conversation and action and can be engaged through reflection on action (Mishra & Koehler, 2005; Mishra, Zhao, & Tan, 1999; Schön, 1983, 1987, 1996).

2.5 THE USE OF ICT TOOLS IN ENGLISH LANGUAGE LEARNING AND TEACHING

As Warschauer (2004) and Samuel (2008) posited, in relation to language learning, the fast extent of the ICTs and modern development have affected our daily lives as follows: (a) phones have changed to wireless communication, (b) dial-up Internet connections have changed to permanent, direct online connections, (c) use of mainly personal computers has changed to the use of portable computing and online devices (e.g., laptops, personal digital assistants and cell phones), (d) narrowband has moved to broadband, (e) expensive personal computing systems have changed to widely reasonably priced computers and other hardware, (f) Internet as an exclusive form of communication and information has changed to being a mass form of communication

accessible to the world, (g) text-based information and communication changed to audiovisual forms of information and communication, (h) use of English as the main online language has changed to multilingual Internet use, (i) non-native shifted to native users of information technology (e.g., children growing up with digital media and having native-like fluency in online communication), and (j) the language laboratory moved to the classroom as a result of making computers and wireless access available almost everywhere.

According to Warschauer (2000) new contexts, new literacies, new genres, new identities and new pedagogies in the field of English Language teaching and learning have been brought about by the changes in the technological revolution. These changes allow language learners, as well as teachers, to be engaged in a multi-tasking experience that incorporate the four modes of language learning: listening, speaking, reading and writing (Crystal, 2004).

Kramsch and Thorne (2002) reflected that learners of English as a Foreign Language have had matchless opportunities to apply English in authentic real-world contexts of language use by making the most of new emergent technologies. The series of ICTs used in the field of language education is continuing to develop and language professionals are conjuring more creative ways to utilize the new technologies. Chism (2003) and Greenfield (2003) believed that the idea of language partnering and cultural exchange via instant messengers, email, cell phones, electronic message boards, video conferences and web blogs is not completely new but has been confirmed by many research studies as a very effective way of indulging language learners in the target language and culture. According to Pururshotma (2005) the use of web quests, simulations, instructive entertainments and virtual field trips online is also growing gradually. In the last few years, the use of disruptive technologies such as *Skype* and pod casting in language teaching and learning has revolutionized language teaching.

The resulting interface between technology and language learners can really benefit the language learner.

2.6 TYPES OF ICT TOOLS

Information and Communications Technology covers a range of tools and systems that can be used by capable and creative teachers to improve the teaching and learning situations. Lim and Tay (2003) categorize ICT tools under the following sub-headings:

- Informative tools; such as the Internet, Virtual Drive Network, Intranet Systems etc.
- Situating tools; CD-ROMS, and so forth.
- Constructive tools: MS Word, PowerPoint, FrontPage, Adobe Photoshop, and so forth.
- Communicative tools: email, SMSM.
- Collaborative tools: discussion boards (e.g. Blackboard 5), forum, among others.

These five types of ICT tools listed are discussed in more detail in the following:

2.6.1 INFORMATIVE TOOLS

Functions that provide a vast amount of information in various formats (e.g., text, sound, graphics or video) are called informative tools. According to Chen and Hsu (1999) informative tools do not do anything themselves but rather can be considered as an enormous passive storage area of information. Multimedia encyclopedia and resources available on the Internet are examples of informative tools. The Internet, as an enormous electronic database, is considered to be the most significant ICT tool in an eLearning environment. A survey done by Pew Reasearch Center for the People and

Press (2002) revealed that three in five children under the age of 18 and more than 78% of children between the ages of 12 and 17 go online. In another study, Arafeh and Levin (2003) found that Internet-savvy students rely on the Internet to facilitate them in their home and schoolwork. In summary, as McNeely (2005) opined, the Internet is considered by students as a virtual textbook, a reference library, a virtual tutor, a study shortcut and as a virtual study group.

2.6.2 SITUATING TOOLS

Situating learners in an environment where they may experience the context and happenings of a situation are provided by situating tool systems. Examples of such situating tool systems include simulations, multi-user domains and virtual reality platforms. Situating tools, such as software in the form of CDs and DVDs, allow teachers to enhance the traditional learning experience. Cheung and Lim (2000) highlight that hypermedia applications, which consist of text, audio, graphic images, animations and video clips, allow teachers to enhance the learning environment by developing learning independence and critical thinking skills. A multimedia presentation of a topic assists students in communicating concepts and ideas to factual world examples. After that, students are able to see the practical application of theories and the link between theories and the real-world situation. According to Phillips (2004) when students are able to use the conceptual instruments of the disciplines in real practice, learning is enhanced and embedded in situated cognition. As Supyan and Mohin (2001) have noted, multimedia can place an amazing range of resources under the instructors' and learners' control. Learning is made more energetic, interactive, collaborative and satisfying by active multimedia learning environments.

2.6.3 CONSTRUCTIVE TOOLS

General-purpose tools, such as Microsoft Word or PowerPoint, can be used for manipulating information and are called constructive tools. Samuels (2009) noted that these tools can influence one's own knowledge while bringing a visual image to one's understanding. Both Microsoft Word and PowerPoint are two great examples of such tools that have had significant impact in both education and business.

2.6.4 COMMUNICATIVE TOOLS

Effective communication is the key to learning. Thus, easy communication via specially designed tools, such as E-mail, electronic bulletin boards, chats, smart boards, and so forth, are ways of facilitating communication between the teacher and students, or amongst students themselves. There are two kinds of communicative tools: asynchronous and synchronous. Asynchronous communicative tools (such as e-mail and electronic whiteboards) are messaging systems enabling information exchange between people. This information is not "live" but is delayed somehow. In contrast, chat or video conferencing, which are called synchronous communicative tools, enable real-time communication. Asynchronous communicative tools are most suitable for activities that need more time in thinking before responding. Today, the use of electronic mail is increasing. The most commonly used part of the Internet is E-mail.

2.6.5 MOBILE LEARNING AND MOBILE TECHNOLOGY

A study by Huang and Sun (2010) demonstrated that mobile learning is a new learning method in acquiring second and foreign language learning, mostly for autonomous on-the-jobs students. The main objective of this study was to discover the use of mobile technology to design a learner-centered English listening exercise system to give students opportunities to constantly practice English listening exercises during a

day by day extra time program, at the same time supporting their interests and satisfying their requirements. This system was created from two subsystems. One is the multimedia materials website that uploads and keeps video materials; the other was the mobile multimedia English listening exercise sub system making available to learners exercises in English listening in an everywhere learning setting. Some studies on this system have illustrated the significance of three objectives. The first is taking benefit of spare time to study a second and foreign language through listening exercises in a learning setting. The second is using mobile tools to study in a preferred location to amplify learning motivation. The third is accepting an Asynchronous Transfer Mode to interact with students in order to reach the goal of lifelong learning.

The effectiveness of technology is obvious in the class; however, knowing about the integration of this technology into the class is most important. The main objective for educators is to know "how to guide students in the use of technology" (Heinich, 1996, p. 8). In addition, educators must then "observe the learning that takes place in response to their instructional efforts" (Heinich, 1996, p. 8). Basically, technology should be considered as an instructive device that acts best when it is part of an integrated program. When there is a reason or objective for using technology, it means there will be proper integration of technology into the classroom. Technology should be used in addition to another method of teaching. For instance, when the students are learning about the rainforest; part of the room might be decorated like a rainforest, with a table of rainforest images and objects. To improve this experience, a teacher may employ technology like an audiotape to play the different rainforest noises and therefore allow students to enhance their understanding.

In today's educational settings, the function of technology in education is clear. Schools are armed with computers and at Northern Michigan University students receive a laptop to help them with academic studies. This is part of NMU's Laptop

Initiative plan that believes providing all students with a laptop will assist in improving their academic performance. However media has many different forms, such as Internet, TV, radio and books; all of these media affect student learning. Around the world, students are able to connect with one another via Internet (Rolls, 2007). Globalization has occurred through mass media devices and the world has been changed to a smaller place. The way media changes education is vast and different. We can observe media as a huge part of our lives. How could it not affect our lives in terms of education? Before we can jump into all the advantages of media to education it is significant that educators and students themselves become what is called "media literate". This is the capability to decode the secret messages in mass media. Schwarz (2001) believed that media literacy is required by teacher education as a vital knowledge in the new millennium. Media has modified the world; in fact media such as the Internet, is continually developing and changing, so instructors must stay with the times and keep up by using these devices for their students. With using of new media power educators can be more capable to access for students information from around the world faster and more easily.

Schwarz (2001) believes that a place in teacher education can be merited by media literacy because it fosters critical thinking in a media-dominated age. This connects students more and makes links between life and school as well. Becoming media literate is not enough for students; teachers must also be media literate for their students. This goes back to when we were babies; originally, a baby is taught by duplicating what it observes others perform. It is simple to put media literacy in the established school curriculum like social science, language, and communications; media has an effect on all of these areas (Cassidy, 2004). Media literacy in social studies lets future teachers "uncover hidden assumptions, to differentiate between related and unrelated information, to identify biases, to divide reality from opinion, and ultimately, to find out the power of the mass medium's message" (Schwarz, 2001, p. 2). Previously,

media has affected education in the sense that it has generated a new subject area to study, a special way to decode the media messages that both student and teachers alike should learn. Of all the new fields constructed by the media evolution, Public Relations, or PR, is the best case. It is based solely on one's capacity to generate media for a mass audience with certain undertones of expression to it, like getting people to go to a concert. PR people control media and bend it to their will so that it may influence peoples' thinking and actions. In addition, understanding media literacy is the first step before moving forward which makes clear the other parts of media in education.

2.6.1 Limitations of Mobile Learning

Through mobile phones we can send SMS but this is not the only capability of mobile phones. Other capacities include the ability to run a wide range of applications such as web browser, taking photographs by camera and GPS. In line with the use of sounds, image and videos that can make m-learning more creative and dynamic, SMS is low tech. The low-tech capacity of SMS holds three positive factors: (a) it forces users to state themselves in brief; (b) it uses little memory for texts which keeps costs down and (c) it requires no extra technology training.

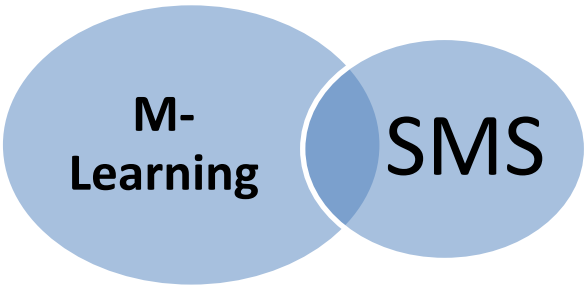

Figure 2.7: Integration of SMS and Mobile learning.

The use of mobile devices for pedagogical purposes such as palmtop computers and “pocket PCs”, mini media players for example iPods, refers to M- learning. Moving from traditional E-learning (through desktop computers) to a more flexible paradigm (through portable “high tech” devices) is semantically focused by handheld learning and hand held technology. This is a complementary way that can support, improve and develop students’ learning experiences. In other words, it is not a replacement for face-to-face sessions in classrooms but rather tools that can be bridged with traditional learning methods to help appeal to students’ interest and enhance their learning.

Levy and Kennedy (2005) and Thornton and Houser (2005) said that M-learning is previously accepted in some subjects for instance languages. According to Maskall (2007) M-learning can be utilized for administration purposes such as to notify students of book accessibility or examination results. Riordan and Traxter (2005) asserted that in the United Kingdom the University of Wolverhampton has been utilizing targeted bulk SMS to improve student support, inclusion and maintenance, but learning via mobile devices still is not so familiar in higher arts education.

2.6.6 MOBILE TECHNOLOGY FOR SECOND AND FOREIGN LANGUAGE LEARNING

Students cannot constantly study in a classroom. If the learning experience never goes beyond the classroom walls than it will be harder for individuals to retain the information for long-term use. This is especially true of foreign language learning. Individuals looking to master a second, or third, language need to take the learning experience into everyday life. Mobile technology should be capable of assisting people to study when and where they are, to support their English skills.

The mobile learning device (MOLD) is the mobile application system that expanded the utility of wireless technologies in education with special reference to the

potential of learning new technical English language words using Short Message Service (SMS) text messaging. The system works by having messages forwarded out to the recipient learners at the times needed by the PC. Thus, the mobile phone becomes a learning tool in assisting one to learn a new language.

A study carried out in Japan (Suzuki & Keller, 1996) expanded two mobile-based systems for Japanese university students learning English vocabulary materials and idioms. The research utilized the e-mail and Web function of mobile phones in conjunction with another set of multimedia lessons to pass on teaching English vocabulary and idioms. Learning on the move and using idioms proved that mobile devices could be helpful devices for delivering foreign language learning materials to students.

2.7 BENEFITS OF UTILIZING ICT TOOLS

Great strides have been made in advancement of technology in recent years. Mobile phone use has expanded from that of a simple voice communication device into that which can now function the same as a full desktop PC. In contrast to desktop computers, mobile phones are independent of stable supply of electricity and they make available the computational abilities of the desktop from a decade ago – this then makes the mobile phone an even more popular necessity in developing nations. According to Eagle (2005) mobile phone use has been remarkably developing in economic and social networks for not only young but also old people in developing countries. Because of their extensive use mobile phones can be considered as a beneficial tool, but there is little attention given to their possible contribution to distance education.

Consequently, the researcher discovered the possible use of text messaging to improve the learning of distance education students in an initial computer class. The

major aim of this study was to evaluate the extent to which instructional scaffolding can be made available using mobile phones and for that matter text messaging.

2.7.1 THE STUDENT EXPERIENCE OF DISTANCE EDUCATION

Sometimes, full-time employment and academic work are an important challenge for long distance students. Klopfenstein (2003) said that distance education students most often discover themselves in an educational setting in which self-direction and autonomy in learning is a dominant approach. Winn (2003) and Prescott and Simpson (2004) stated that distance education students can find this disorienting and motivating themselves to study can be difficult until they have expanded a capacity for autonomous learning. Learners need support and structured learning experiences (McLoughlin, 2004). Harley, Winn, Pemberton, and Wilcox (2007) pointed out much attempt has been devoted in recognizing tactics to assist students in doing this. Instructional scaffolding is one of the tactics.

2.7.2 SCAFFOLDING

Scaffolding is the process by which a learning task is modeled by the teacher and gradually shifts to where the students are the ones completing the learning task on their own. The technique of scaffolding is viewed as enabling students to gain the confidence of achieving set learning tasks on their own (Wood, Bruner, & Ross, 1976). Graves and Graves (2003) noted that scaffolding helps children increase their confidence, which helps provide motivation, while reducing stress. However, the contrasting view of scaffolding is that it impedes learners' ability to be fully independent.

As Hogan and Pressley (1997) have said, there are five different scaffolding techniques such as offering explanations, inviting student participation, modeling of

desired behavior, inviting students to contribute clues, and verifying and clarifying student understanding. According to Byrnes (2001) the five techniques can either be utilized separately or integrated. Instructional scaffolding when implemented effectively point to a number of attractive educational results. As put forth by Lange (2002), instructional scaffolding has two major steps: (a) the improvement of instructional programs to take students from what they already know to a fuller understanding of new material, and (b) implementation of the programs, wherein the teacher presents support to the students in all levels of the learning process.

In an experiment conducted by Lange with distance education learners in an introductory computer course, the free SMS text feature in *Yahoo!* was sent to the experimental group and the numbers were entered into the address book generated in *Yahoo!*. The students who contributed were located around the world in countries including Afghanistan, Chile, Egypt, Iraq, Colombia, and Panama. A total of twenty-seven students participated in the experiment over a period of three semesters. Text messages sent to students included carefully designed messages to help the students in arranging their ideas and joining them to related information, notification of homework deadlines, verification of student understanding and procedural scaffolds for explanation of precise duties.

Turnbull, Turnbull, Shank, and Leal (1999) believed that text messages endeavored at helping students to classify their ideas and to connect them to related information were based on educational plans as offered in another place. Each scaffolding plan was designed cautiously, in order that new information the student learns provides a rational next step, based on what they previously knew. The researcher relied on having some questions and providing a set of questions to show student thinking. The aim was to hold up and get better student understanding of the topic under discussion. The timing and nature of the messages were designed with awareness. Three

days before the class start date reminder messages were sent. According to Downer, Meara, and Da Costa (2005) this lead-time was selected in order to decrease the opportunity of students forgetting the start dates. For each student, a single message was sent every day, over the three-day period, to a single phone number. If the student had given more than one phone number, the message was sent to the preferred number given. Notifications of assignment deadlines were also "texted" three days prior to the due date and were replicated each day until the due date. Students were also cheered to send a check-in message by texting "Here" to the writer at the start of each week. It served as a roll-call and a way to ensure students were still dynamically contributing in the experiment. The researcher asked learners who volunteered to take part in the experiment to take part in an exit interview and asked what the students thought about the learning experience. In conclusion, text messaging as scaffolding can be a platform for learning.

2.8 MOTIVATION

In foreign language teaching and learning, methods are regularly considered as a significant constituent of language teaching. It is argued that success or failure in language teaching and learning relates to the methods applied since it is the method that finally decides what should be taught and how the language instruction should be. In other words, methods determine the procedures and techniques for language teaching. However, at the other extreme is the view that methods are of little importance. It is thus argued that learners and teachers are those who matter most. Mackey (1965) said that if learners are eager and motivated to learn, learning will occur regardless of the method used and methods are only as good as their teachers. Teachers can use them as an instrument. Even with the second position being advocated in recent years efforts are

still being made to discover the best method. No single method, however, has been found to be the best for everyone.

Motivation from students regarding the use of SMS text messaging in scaffolding must be considered. If students are not motivated then their participation will wane. Further, student age must be considered in utilizing technology outside of the classroom. According to Myers, Bennett, Brown, and Henderson (2004) the elderly are less possible to be stimulated in the use of instructional technology.

Despite the increase of mobile phones and SMS texting in the developing countries, its possible role in distance education has received little or no consideration. The research done by Henderson et al. (2004) was based on the supposition that most university students in the developing countries already had mobile phones and employed text messaging. A sample of student reaction specified that instructional scaffolding using SMS texting can be helpful in ensuring learner education is enhanced.

The mobile phone and its text messaging abilities provide new ways for student learning to take place and enhance student learning. Despite advancements in messaging technology, when it comes to mobile phones, text messaging provides the first and most basic form of engaging distance education students via mobile tools. This is especially true in developing countries where the masses have less access to smartphones and other electronic devices (Bosco & Sum 2007).

In current years, the application of ICT tools in education is given more attention in light of the number of benefits from appropriately utilizing ICT. The main advantage of using ICT tools is that it helps retrieve up-to-date information at the click of a mouse. As said by Ofsted (2002), ICT tools can present three important tasks and they are as follows:

- The speed and automatic functions of ICT can enable teachers to demonstrate, explore or explain aspects of their teaching and pupils'

learning more effectively; the capacity and range of ICT can help teachers and their pupils gain access to historical, recent or current information;

- The provisional nature of information stored, processed and presented using ICT allows the work of teachers and pupils to be changed and improved easily, for example writing materials which require corrections or several edits;
- The interactive way in which information is stored, processed and presented can enable teachers and students to explore models, communicate effectively with others and present information effectively for different audiences.

2.9 ICT TOOLS TO FACILITATE E-LEARNING

E-learning has been given a wonderful boost by unparalleled expansion of information and communications technology tools within the last 30 years. Wang (2005) pointed out the need for technology and ICT integration in English language teaching and learning computer technologies have noticeably changed the way people collect information, conduct research and interact with others globally. A study conducted by Al-Jarf (2004) examined the efficiency of web-based instruction in the writing of freshman students learning English. The results of his study found that the use of web-based lessons in conjunction with the traditional in-class instruction was significantly more effective that simply using traditional in-class instruction.

Another study by Morrison and Lowther (2005) found that integrating laptops and internets into classroom instruction led to greater learner success and performance throughout their three year study.

In another study, Hertel (2003) portrayed an intercultural e-mail exchange at the college level where U.S. students in a beginning Spanish class and Mexican students in an intermediate English as a Second Language class corresponded weekly for one semester. Survey results showed this student-centered endeavor had the possibility to modify cultural attitudes, amplify knowledge and awareness of other cultures, promote language acquisition, as well as improve student interest and motivation in language and cultural studies.

Results of a study to detect the extent to which the computer was successfully integrated into a writing class among thirty-six Diploma in Computer Science students in the International Islamic University Malaysia, showed that the students' writing had developed in terms of vocabulary and grammar. Further studies done by Cooper (2001), Smith et al. (2001) and Li Wang (2005) specified that computers had supported respondents in generating numerous drafts hence producing better overall quality essays. They asserted that designing innovative teaching with ICT tools is the key to effectively integrating technology in the language classrooms. Li Wang (2005) also explained that technology helps out literacy education as follows:

a) In this information era, word processing is a requirement for any language class because a lot of activities such as writing, prewriting, drafting, revising, editing, saving, printing, inserting tables and graphics, and publishing can be done by word processors.

b) Leu and Leu (1997) said that stories on the Internet are enhanced by multimedia to considerably stimulate reading-reluctant students, leading to better literacy results. They added despite the fact that electronic books will never completely replace traditional books they are worthy supplements for printed textbooks.

c) In many methods, such as in newsletters, flyers, web pages and CD-ROMs, computer technologies make students' work easy to publish because students are

motivated and invest themselves in their work when engaged in authentic tasks (Anderson & Speck, 2001). According to Anderson and Speck, a primary goal in teaching literacy is publishing students' work for students to engage in meaningful and purposeful assignments.

d) While the language is for communication, contact through the Internet has broken down distance as an obstacle to communication. For that reason, students can increase partnerships with learning peers in target languages via Internet. E-mail, instant messaging, chat rooms and bulletin boards are the major approaches of communicating on the Internet. Instant messages can be sent with MSN and Yahoo! Messengers and students can also have audio and video conversations that significantly stimulate and enhance their speaking and listening capabilities.

e) Valuable resources such as databases, online journals, news, instructional materials from around the world are offered by Web pages that facilitate many teachers in using the Internet as their "virtual library."

As Warschauer and Meskill (2000) stated, many studies have shown that technology has positive results on language learning. They believed that the benefits of using new technology in language classrooms can be interpreted in the light of the altering objectives of language education and the shifting circumstances in our post industrial society. Thus, technology integration into language classrooms is becoming less and less unavoidable as technology encroaches into other areas of the learning sphere.

Brown (1997) as well as Wolffe and McMullen (1996) said that language is a live item; hence, the best method for learning a language is in interactive, authentic, environments. They added that computers and Internet as a new technology are dominant tools for helping students acquire knowledge in a foreign language.

2.10 ICT TOOLS AND THE DEVELOPMENT OF COMMUNICATION SKILLS

Ability to convey or interchange thoughts, opinions and information through speech amongst two or more persons is called oral communication skill. The basis of communication and the greatest use of language is oral language. In fact, it is the basis of literacy. Listening and speaking can help students to learn about themselves and their world. Students can express their thoughts, ideas and feelings by learning and being able to react to the communications of others; thus, becoming more actively involved in society. Oral language expansion in school does not imply teaching children to converse so much as providing them with the skills and chance to talk more successfully.

According to Bertram (2002) thinking, knowledge and skills are involved in communication. Practice and training can develop valuable communication. Although oral language acquisition is considered a natural process, it does not mean that all children will mechanically obtain successful communication skills. Concentration and regular practice are needed for optimum development in communication. Fluency, clarity and sensitivity are three criteria for oral language competence according to Holbrook (1983). The teacher should help students to develop these levels of development. Prior to students obtaining reading and writing ability, oral language is the significant force giving individuals the ability to acquire knowledge. Indeed, during life, for communication of ideas and intelligent conversation, oral language skills stay vital.

Of course, there is a lot of oral language used in the classroom. However, teacher talking is more than the students talking during the delivery of course material in a classroom program. Stabb (1986) declared that there was a stable reject in the use of oral language in the classroom. She revealed that there was a connection between this and inhibition of students' capabilities to reason and to predict as they shifted from low grades to high. Oral language is a very vital connection in the process of students' learning and thinking improvement. Oral language makes available a base for the

expansion of other language skills. Lyle (1993) said that students learn to manage their thinking and to center their ideas when children talk about themselves and their experiences. It is significant to present chances for oral language to develop in the classroom from those basics. Indeed, during life, oral language skills stay a necessity for communication of thoughts and intellectual dialogue.

According to Arthur (1999):

> *Video can give students realistic models to imitate for role-play; can increase awareness of other cultures by teaching appropriateness and suitability; can strengthen audio/visual linguistic perceptions simultaneously; can widen the classroom repertoire and range of activities; can help utilize the latest technology to facilitate language learning; can teach direct observation of the paralinguistic features found in association with the target language; can be used to help when training students in English for Specific Purposes (ESP) related scenarios and language; can offer a visual reinforcement of the target language and can lower anxiety when practicing the skill of listening* (p. 2).

Canning (1998) pointed out that the video is not imprisoned in the traditional classroom with the increase in educational technology; it can simply be developed into the computer supported learning lab. When video, CD-ROM, and computers are used in interactive language learning, they let learners view and actively involve themselves in lessons. For instance, when students listen repeatedly to a video clip on "The House That Jack Built" and "There Was an Old Lady Who Swallowed a Fly", there is better maintenance on the suitable pronunciation of the rhymes. As soon as learners repeat the rhymes to other friends, their oral skills will be reinforced and improved.

Another ICT tool used to develop communication skills is the tape recorder. A tape recorder can allow the learners to learn a foreign language with the correct accent by listening to the voice of the native speaker. Meenakshi and Jayachandran (2007) posited that live video conferencing will help guide the establishment of a centralized pool of tutors. Partner taping is another use of the tape recorder and the microphone. Partner taping outside of class suggests a simple, practical, "low tech" method of getting students to develop more fluency in a foreign language and acquire duty for their

language practice. Of course, some extra work is required by the teacher but it is well compensated. All in all, students are needed to tape conversations outside of class every week in order to get more fluency practice.

Kluge and Taylor (2000) reflected that the results of this "partner taping" have been encouraging. Students keep on in English while taping, expand greater fluency, get hours of extra practice, keep a tangible record of their progress and play a more active role in their learning. The teacher also has a better understanding of the students and their language problems.

In this study, communication skills will be improved by technology in following ways:

- Technology provides facility for anywhere and anytime education. For example when someone has a hand phone, the online dictionary installed on the phone can provide translation of words and in this study words inside the learning material can provide the content of learning in different places. As a result, when students are engaged with the content of learning it can be expected that their learning can be promoted.
- Attractiveness of technology is another issue. Students like to touch new devices of technology. The curiosity of students for familiarity with technology can provide unique opportunity for learning.
- Learning by distance education can enable students to feel free and encounter less pressure from teachers.

2.11 IMPROVING OF COMMUNICATION SKILLS BY TECHNOLOGY

Zhao (2003) reported that there is a trend to only consider the technology and not how it is used. However, what teachers want and need to know in order for them to appropriately integrate technology into the classroom is starting to receive more

attention.The Technological Pedagogical Content Knowledge (TPCK) model developed by Mishra and Koehler (2005) explains that developing good content needs a thoughtful connection between all three key sources of knowledge: technology, pedagogy and content. For effective technology integration, teachers needed TPCK as a framework to understand and describe the kinds of knowledge.

Successful integration of technology can create an effective and enhanced classroom as an integral component. Teachers should look at the different advantages and detriments of technology so that they can decide what the most effective ways are to integrate technology into their class. An appropriate combination of technology and other instructional teaching methods is the best way for developing appropriate lessons that will improve student learning.

2.12 USING ICT TOOLS TO IMPROVE STUDENTS' ORAL SKILLS

As Rosell-Aguilar (2005) said, in the field of Computer Assisted Language Learning (CALL), computer-mediated communication (CMC) has grown quickly, particularly with regard to language knowledge. Human-computer interaction has changed to human-to-human interaction via the computer. For that reason, according to Herring and Associates (1996) CMC can be described as “communication that takes place between human beings via the instrumentality of computers” (p. 1). Chun (2002) pointed out CALL helps to teach pronunciation via the visualization of prosodic features such as intonation patterns, stress and rhythm to help increase student understanding.

2.13 USING INSTANT MESSAGING (IM) FOR IMPROVING COLLABORATIVE LANGUAGE ACTIVITIES

Using a synchronous environment (oral conversation online) is another solution for improving oral communication skills. Lamy (2004) pointed out that “with the

increasing availability of synchronous voice-based groupware and the additional facilities offered by audio-graphic tools, language learners have opportunities for collaborating on oral tasks, supported by visual and textual stimuli via computer-conferencing" (p. 520). Lamy further stated that voice-based synchronous as CMC act as "a specific mode supporting conversations that are both different from face-to-face ones and influenced in significant ways by the interactions of learners with each other, i.e. human-machine-human interaction" (p. 521). Studies in corporate settings done by Poe (2001) have emphasized the wide use of instant messaging (IM) for quick task-related consultations among co-workers. Quan-Haase, Cothrel, and Wellman (2005) declared that Instant Messaging is manipulating social distance between subordinates and superiors.

Indeed, there are possible educational advantages of the various modalities of IM for ESL learning. Learners utilizing the text, video and audio components of different IM applications can communicate effectively with colleagues and thus there are potential educational advantages of the various modalities of IM for English language learning by allowing teachers to work with students and give immediate feedback to learners of the foreign language. In a study done by Coverdale-Jones (2000), student perceptions about a video conferencing project between students of German and native speakers in Germany showed that the students mentioned two benefits for using this technology. Firstly, immediate communication with a real person, from their own age group, and secondly there is real communication occurring in the video conferencing. Stepp-Greany (2002) depicted that video conferencing makes possible communication authenticity and improves students' self-belief in speaking.

Internet-based desktop video conferencing (DVC) has become an increasingly popular alternative that is more flexible and cost effective than traditional video-

conferencing. It is especially becoming popular amongst foreign language students and within foreign language classes.

In this environment, participants connect a webcam and microphone to their personal computers and interact via fast Internet connections that support instant messaging applications so that they may partake in conversations utilizing the language being learned and receive oral feedback from the instructors. Wang (2004) has noted that the ability to utilize online learning environments with audio and video components holds great potential for those students who desire to master a foreign language.

Sotillo (2006) carried out a small-scale exploratory study of negotiated interaction and error correction episodes in CMC environments among 10 participants. He exposed a number of exciting results. Written and oral components are involved in this kind of study as collaborative activities. The language learners were also provided with chances to elicit corrective feedback from their teachers. The chat logs of text messages and the records of tape recorded exchanges from the 10 participants in this study confirmed successful response when instructor feedback was provided for learners. Successful understandings (75%) took place when tutors or instructors provided ESL incorporated corrective feedback into their written and spoken output in subsequent turns for learners. In contrast, unsuccessful understandings happened when ESL learners pay no attention to their tutors' feedback. Consequently, the study demonstrated that the type of one-on-one focused negotiated interaction available in an IM environment helped to develop students' awareness of linguistic forms or grammatical structures in second language input. According to Roux (2000) the most attractive benefit of video conferencing technologies for language learning and teaching is that it allows real time visual contact among students and teachers in diverse places. In the case of EFL, video conferencing stimulates students to organize projects and presentation for a real out-of-the-classroom audience.

2.13.1 SMS INTEGRATION

2.13.1.1 Proposing a practical framework: How to start with SMS?

In order to preempt and prevent problems, three key areas should be taken into account prior to starting SMS learning with students. These three areas consist of pedagogy, economics and technology, as discussed in the following:

2.13.1.2 Pedagogy

What is the pedagogical plan, what are the (intended learning) outcomes? The rationale must be anchored in pedagogy, as opposed to using the available technology just because it exists. Pedagogical considerations also refer to student demographics and learning needs/styles. SMS may not be suited to all types of students but some may find it refreshing, innovative and beneficial.

2.13.1.3 Economics

What are the cost implications for users – both teachers and students? Some networks provide packages of unlimited texts; others have schemes in place for bulk purchasing of SMS messages. Any investment would remain minor though, unlike the implementation of large scale learning management systems or virtual learning environments. Parameters and expectations need to be clarified in advance (e.g., are students supposed to reply).

2.13.1.4 Technology

The vast majority of current phones, if not all, can receive and send SMS; this would be different for other aspects of m-learning involving images (where quality would highly matter), sound (playing music or teachers' explanations) and videos (to watch podcasts).

2.14 ENGLISH VOCABULARY LEARNING BY SMS

As Bosco and Sum (2007) have stated, the high popularity of SMS messaging amongst young adults makes it a potentially great instructional tool. The ability of SMS lessons to be immediate with a manageable amount of information can help foster student learning. Moreover, the constraint of a mobile phone's small screen can be overcome by the positive effect of being able to learn on the go. Prensky (2005) highlights that bite-sized information delivered at consistent intervals via mobile phone SMS is more manageable for students and thus comes off as more appealing when compared to the one-shot mass of paper material typically handed out in class. As Baddeley (1990) noted, text messages can make it easier on the learners, and the instructor, as the messages can be sent out at pre-determined times where the receiver can easily view it on the go as well as store it for later retrieval. This makes the mobile phone a possible effective tool for encouraging more self-guided learning when it comes to mastering English vocabulary.

As Roschelle, Sharples, and Chan (2005) concluded, learning management may best be enhanced by a combination of mobile technologies and human assistance. New English vocabulary words can be sent out to students in an SMS where the learners are then challenged to provide feedback on the vocabulary by utilizing them with each other, and the instructor, in the proper way.

A Study conducted by 김혜숙 (2012) about using short message service for vocabulary learning by students' English proficiency indicated that the SMS groups performed better than the groups who had received printed materials, regardless of students' proficiency levels. Based on the results of this study, most of the students receiving SMS preferred this new method of learning English words. However, there was no significant difference in the perceptions of mobile learning between the two levels.

Another study accomplished by Wu (2014) on learning ESL vocabulary with smart phones revealed that the students receiving treatment in the experimental group outperformed those in the control group significantly. This study introduced a research design and set up a pedagogical example, which might be followed.

Wang and Smith (2013) investigated reading and grammar learning through mobile phones; they described an ongoing language-learning project, three years into its development, that examined both the feasibility and the limitations of developing English reading and grammar skills through the mobile phone interface. Information gathered from participants and server logs indicated that reading and learning grammar using mobile devices is regarded as a positive language experience. However, the data also indicated that the success of any mobile learning project could be limited unless certain criteria are applied. This includes (a) providing engaging learning materials that are neither too long nor overly-demanding; (b) a proper degree of teacher monitoring; (c) student involvement; (d) the need for incentives; (e) a respect for privacy; and (f) a safe and secure mobile-learning technical environment.

Another study done by Saran et al. (2012) on mobile language learning looked at the contribution of multimedia messages via mobile phones in language learning. The study investigated the effectiveness of using multimedia messages via mobile phones in helping language learners consolidate their vocabulary. The study followed a pre-test/post-test quasi-experimental research design. The participants of this study were a group of students attending the English Preparatory School of an English-medium university in Turkey. Six different groups were formed in order to investigate the comparative effectiveness of supplementary vocabulary materials delivered through three different means: via mobile phones, on web pages, and in print form. The multimedia messages in this study included word definitions, exemplary sentences, related visual representations, information on word formation, and word pronunciation.

Result of the quantitative data showed that using mobile phones had positive effects on students' vocabulary acquisition. The finding proposed that mobile phones offer great potential for providing learners with complementary opportunities to re contextualize, recycle, and consolidate vocabulary.

Another study completed by Sandberg et al. (2014) regarding the added value of a gaming context and intelligent adaptation for a mobile learning application for vocabulary learning on purpose of the added value of a gaming context and intelligent adaptation for a mobile learning application. The control group worked at home for a fortnight with the original Mobile English Learning application (MEL-original) developed in a previous project. The experimental group worked at home for a fortnight with MEL-enhanced, the original application embedded in an adventure game and augmented with intelligent adaptation. Two learning themes were used: Zoo animals and Neighborhood. Both groups attended lessons at school on Zoo Animals and Neighborhood during the same periods they were allowed to work with the application at home. Pre- and post-tests were conducted to establish the initial vocabulary knowledge and the knowledge acquired during the learning phase. The main results indicated that students in the experimental condition (MEL-enhanced) outperformed the children from the control group (MEL-original), although the former group did not spend more time with the learning material than the latter, and that the experimental group students valued MEL-enhanced more than the control group children valued MEL-original.

Oz (2014) who studied prospective English teachers' ownership and usage of mobile devices as m-learning tools aimed to better understand how prospective teachers of English language teaching (ELT) use mobile technology for learning and how they want to use mobile devices for teaching in the future. A total of 144 student teachers enrolled in an ELT department at a major state university participated in the study.

Based on descriptive statistics, the findings showed that a great majority of the participants currently own and use phones, particularly internet capable ones, MP3 players, and tablets. Nearly four in ten prospective English teachers plan to buy a tablet (e.g., iPad), three in ten intend to purchase smart phones (e.g., iPhone), and one in ten is likely to purchase an e-book reader (e.g., Kindle.) over the next year or two. Further, nearly all the participants stated that despite the impediments, they wanted to use mobile devices in their English lessons and teaching regularly in the future. Based on this study the researchers believed that the biggest barriers that might moderate the appropriate application of mobile devices in ELT included the great versatility in device types, pedagogical justifications, administrational factors, lack of training, and lack of devices due to financial restrictions

The result of another study carried out by Oberg and Daniels (2013) about the effectiveness of student-centered mobile learning instructional method in language acquisition aimed at a self-paced instructional method based on the use of Apple's iPod Touch personal mobile devices to deliver content was compared with a group-oriented instructional method of content delivery in terms of learner acquisition of course material showed a significant difference emerge between the groups; the experimental group scored consistently higher than the control group. Results of a post-treatment survey given to the experimental group also indicated very positive learner attitudes toward the self-study iPod Touch-based instructional method.

Obari et al. (2012) have conducted a study regarding the use of digital storytelling and blog activities to make CALL classes more dynamic and personalized for both teachers and learners. The goal of the study was to examine the effectiveness of blended learning in improving English language proficiency, including presentation skills with blogs and PowerPoint slides. For this purpose, data from recent empirical studies were presented, including results from the Computerized Assessment System for

English Communication (CASEC), which show that students' English proficiency improved after being exposed to blended learning.

Lin (2014) did a study regarding learning English reading in a mobile-assisted extensive reading program. Based on this study previous studies on Extensive Reading Programs (ERPs) have reached positive conclusions, namely, that an ERP for language learners is effective in improving their linguistic abilities related to reading and promoting their motivation and attitudes toward reading. Current mobile devices, even though suitable for reading, have not yet been applied to develop language learners' linguistic proficiency and affective abilities in any ERP. The aim of the present study was to address this gap in literature by investigating the effects of using mobile tablet PCs in an online ERP on adolescent English learners' online activities, reading ability and users' perceptions. Two intact classes taught by the same English teacher in a senior high school in Taiwan were recruited to participate in a ten-week online ERP. One class was assigned to the mobile group reading their assignments on their tablet PCs and the other, the PC group, reading theirs on desktop PCs. During the online ERP, each class dedicated one class period every week for in-class reading and the participants in both classes were encouraged to read as many books as possible after the class period. The results indicated that the mobile group not only did better than the PC group in online activities and reading achievement but also showed greater appreciation of the online ERP than their PC counterparts. The study also proposed two directions for future studies on mobile-assisted reading. They included learners' studying textbooks and their reading strategies on mobile devices.

Hwang and Chen (2013) declared that it is beneficial for students to experience situational learning, especially for English as a Foreign Language (EFL) learning. Providing more listening and speaking opportunities could help EFL students with English learning. Based on this study the proposed system attempts to help participating

EFL students by presenting learning contexts in familiar situations, such as during lunch at school. The results show that the proposed system and designed activities provided EFL elementary school students with listening and speaking practice opportunities in basic vocabulary and simple sentences with the support of familiar, situational learning. In the experiment, the experimental group learned multimedia-based learning materials about food materials at lunch with PDAs. In contrast, the control group learned via paper-based learning materials in class without real contextual support. After the experiment, findings revealed that the experimental group significantly outperformed the control group in learning achievement. By providing recommended sample voices recorded by peers, students in the experimental group could repeatedly listen to the recordings in familiar situations, thus obtaining more opportunities to practice and interact with peers later. The other significant finding is that the number of peers used to practice speaking English in daily contexts, defined as practice diversity, was significantly correlated to learning improvement. That is, when students practiced speaking English with an increased number of peers, in familiar contexts, their English skills improved. In addition, students in the experimental group extended their learning from school to home. Furthermore, students' learning was not only a deliberate event or situation learning also took place spontaneously in their daily lives. Therefore, the proposed system and activities can help EFL students, particularly novices, listen to and speak English in familiar situational contexts.

Agca and Ozdemir (2013) believed that the importance given to foreign language with the development of information and communication technologies has led to innovations in teaching activities. New modern ways have been sought for using information technologies in foreign language courses and how these technologies can be transferred in more effective and engaging way. Based on this study, the effect of the multimedia content integrated to learning materials using 2D barcode technology to

vocabulary learning and students' ideas about this new learning environment were investigated. Forty (40) students from Gazi University, Department of English Language Teaching participated in the study and they were separated into two groups randomly. Learning content is limited to the 84 words contained in the course book. Mobile content has been presented to the students with 2D barcodes placed on the pages of the book. The achievement test measuring the vocabulary learned was applied to the students before the study as pre-test and after the study as post-test. Participants used the course book and mobile learning material for two weeks. In conclusion, the mobile assisted learning environment has increased students' level of vocabulary for the target words. Students' opinions about this new environment supported the results.

Al-Jarf (2012) who studied mobile technology and student autonomy in oral skill acquisition found significant differences between both groups as a result of using the mp3 self-study lessons. Two groups of EFL first-year university students participated in the study. Pretest scores showed no significant differences in their oral proficiency level. Both groups were then exposed to the same in-class instruction that depended on the textbook. They covered the same lessons, skills, exercises, and tests. Since first-year students have no opportunities to listen to native speakers or practice English out of class and have problems in auditory discrimination, listening comprehension, oral expression, and oral fluency, the experimental group used a self-study mp3 English listening and speaking program. They practiced 90 lessons and 900 short audio files of basic English structures and commonly used expressions out of class, on their own. The mp3 lessons consisted of short sentences which the students could read, listen to, and mimic as many times as needed. On average, the students practiced 3.5 hours a week. At the end of the semester, they were post tested. The experimental group made higher gains in listening and speaking abilities. Improvement was noted in listening comprehension, oral expression, fluency, pronunciation

correctness, and vocabulary knowledge. Results also showed positive correlations between (a) practice time and number of lessons covered by the students and (b) listening and speaking posttest scores. Students reported positive attitudes toward the mp3 self-study listening and speaking lessons.

Billings and Mathison (2012) have done another study regarding using technology-based advance organizers to support the academic success of English learners. Their study investigated the impact of technology-based advance organizers (TBAOs) on the academic performance of 240 4th grade English learners (ELs) participating in a science class in School in the Park (SITP), a museum-school collaboration. While SITP provides a rich, hands-on learning environment, ELs face significant linguistic challenges in their ability to access the dense academic language and concepts provided in SITP's English only curriculum, thus negatively impacting student engagement and learning. The TBAOs were designed in response to this issue. The study investigated two forms of treatment: TBAOs viewed on individual handheld mobile devices (HMDs), specifically iPods; and, TBAOs viewed as a whole class on DVD.

The study utilized both qualitative and quantitative data sources, including a pre- and posttest, hands-on and performance-based assessments, as well as focus interviews. Results showed a significant interaction effect between group assignment, language status and application assessments, indicating ELs performed significantly better in the treatment groups. Students who used the HMD instead of the DVD or no treatment improved their total scores significantly on hands-on, performance-based measurements. Differences between treatment and control group performance on pre-/posttests approached significance. Furthermore, students reported TBAOs supported learning by introducing new material besides helped them to review daily academic vocabulary. Classroom and museum educators reported an increase in the treatment

group's motivation and engagement. The study provided important implications in the use and power of learner-controlled technology in supporting ELs' linguistic and academic success.

According to study conducted by Hong et al. (2014) calibration was introduced to improve English vocabulary learning for learners to reduce the number of repetitions and to improve vocabulary memorization. Thus, an App for the iPhone 4 called English Vocabulary Learning @ Star (EVL@S) was designed for learning English vocabulary. Data from 107 participants were collected for confirmatory factor analysis to verify the reliability and validity of the research instrument, and then structural equation modeling was applied to better understand the correlates of users' learning confidence. The results revealed that Smartphone self-efficacy (SSE) could serve as a predictor for English learning anxiety (ELA) and a judgment of over-confidence (JOOC). ELA was a positive antecedent of JOOC. In addition, JOOC was negatively correlated with self-confidence in using learned vocabulary (SCLV). These findings implied that a practice scheme of calibration can be implemented in learning English vocabulary or in learning any other languages.

Another study conducted by Hsu (2015) aiming at providing adaptive assistance to improve the listening comprehension of eleventh grade students. This study developed a video-based language learning system for handheld devices, using three levels of caption filtering adapted to student needs. Elementary level captioning excluded 220 English sight words, but provided captions and Chinese translations for the remaining words. Intermediate level excluded 1000 high frequency English words, but provided captions for the remaining words, and 2200 high frequency English words were excluded at the high intermediate caption filtering level. The results showed that viewers were provided with captions for words that were likely to be unfamiliar to them. Participants in the experimental group were assigned bilingual caption modes

according to their pre-test results, while those in the control group were assigned standard caption modes. The finding specified that students in the experimental group preferred adaptive captions, enjoyed the exercises more, and gained greater intrinsic motivation compared to those in the control group. The results confirm that different students require different quantities of information to balance listening comprehension and indicate that the proposed adaptive caption filtering approach may be an effective way to improve the skills required for listening proficiency.

Hsu et al. (2013) investigated the effects of different display modes of video captions on mobile devices, including non-caption, full-caption, and target-word modes, on the English comprehension and vocabulary acquisition of fifth graders. The findings showed significantly better learning effectiveness in terms of vocabulary acquisition than those in the control group. Furthermore, in terms of listening comprehension, the students in all three groups made remarkable progress. During the one-month experiment, the status of the students' English listening comprehension and vocabulary acquisition was evaluated on a weekly basis. From the experimental results, it was found that the learning achievement of the English target-word group was as good as that of the full-caption group in terms of vocabulary acquisition, while both groups outperformed the non-caption group.

Another experimental study by Hsu and Lee (2011) investigated learning tourism English using mobile phone technology. Fifty tourism students in Taiwan were randomly assigned to In-Class Group (CG) or Mobile Group (MG) and the MG subjects were surveyed. The findings indicated that MG students generally appreciated the experience of mobile learning (m-learning) but some aspects of m-learning were not perceived positively by them. In terms of m-learning effectiveness, statistical analyses confirmed the benefits of m-learning in vocabulary retention and grammar learning. The

researcher noted that the large effect size also validated the applicability of m-learning to learning tourism English.

2.14.1 ENGLISH VOCABULARY LEARNING

There have been many different methods for learning different languages all around the world and learning English, as an international language has always been a difficult. For easier learning, various methods and strategies have been proposed. And it is obvious learning words is essential for learning a language. Since the present study examines a possible strategy for learning English vocabulary, presenting some discussions about the current strategies seems inevitable.

According to O'Malley et al. (1985), language learning strategies are any set of operations or steps learners use to help acquire, store, retrieve or use information with ease. Providing a situation for helping students acquire the necessary knowledge was a primary concern of this study. Specifically, if using SMS learning would help them better acquaint themselves with the needed vocabulary knowledge or not.

Another study done by Zarei (2011) on L2 vocabulary learning through multimodal representations, discovered "how Iranian learners of the English language learn L2 vocabulary through laptop based delivery of multimodal items". To that end, learners were placed into four different short term memory (STM) ability groups, using the Visual and Verbal Short Term Memory Test. Upon treatment, they were evaluated on their recognition and recall of vocabulary items. The results showed that except for the low visual and low verbal group, the other three groups treated with vocabulary items with pictorial or written annotations performed significantly better on the tests. The researchers added that learners' cognitive styles should be considered in teaching vocabulary.

2.15 LEARNING THEORIES

2.15.1 BEHAVIORIST THEORY

The advocates of behaviorism presume that a particular form of desired behavior must be reinforced for learning to occur. They believe that the learning process must be strictly controlled by someone like a teacher. The instructor must encourage the desired behavior and discourage undesired behavior; through this method, learning can occur. Behaviorists stress that human beings learn in the same way other animals learn. They state that rewards and encouragement can hasten learning.

Supporters of this theory state that there must be two important principles for learning: stimulus and response. They emphasize positive reinforcement as a facilitator of learning.

Stimulus and response are two main points during the learning process, according to the behaviorist theory. The behaviorists consider there is a physically powerful connection between stimulus and response. It will be improved by positive support if the answer is favorable. This procedure is replicated several times and increasingly the desired response will change into a routine. In contrast, the desired response will be delayed before changing into a habit if the reward is unfavorable. In particular, in the early stages, strengthening is very essential for implementation in learning. Teachers must use it regularly (Chitravelu et al., 1995).

2.15.2 CONSTRUCTIVIST THEORY

To the constructivists, the main focus is put on the learners and learners are considered especially important (Brown, 2000). They think language is a dynamic process. Thinking, discovering the rules and applying them is needed by learners and they must complete these steps.

2.15.3 HUMANIST THEORY

Humanism imagines sentimental and emotional aspects of play as an important role in learning. The main point in humanistic theory is concerned with a good environment for learning. In other words, a good quality environment can positively affect the process of learning (Chitravelu et al., 1995).

2.16 MEDIA RICHNESS THEORY

Figure 2.8 illustrates the media richness theory proposed by (Daft, Lengel, and Trevino (1987).

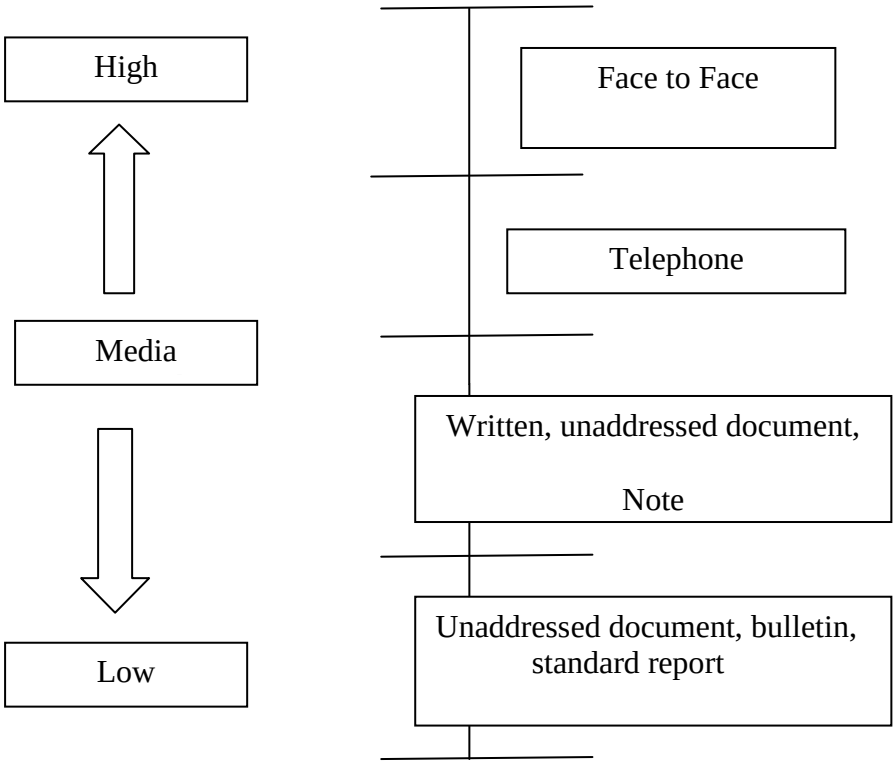

Figure 2.8: The hierarchy of media Richness theory (Daft, Lengel, & Trevino, 1987)

Daft, Lengel, and Weick (1984) were the first proponents of this theory. They, and their successors, suggested that communication media has unequal capacities for handling uncertainty, negotiating varying interpretations and facilitating understanding.

Two main assumptions of this theory are that people want to conquer equivocality and uncertainty in organizations and different kinds of media normally used in organizations work better for certain tasks. Applying four criteria, Daft and Lengel suggested a media richness hierarchy, arranged from high to low degrees of richness, to demonstrate the capacity of media type progression ambiguous communication in organization. These criteria are discussed throughout the following paragraphs.

As presented in Figure 2.8, face to face communication is the richest communication medium in the hierarchy followed by telephone, electronic mail, letter, note, memo, special report, flier and bulletin, from the strategic management perspective (Soy, 2001; Trevino, Daft, & Lengel, 1990). The media richness theory, according to the authors, suggests that effective managers create rational choices corresponding to a special communication medium to a definite task or objective and the degree of richness required by that task.

Specifically, media richness theory states that the reason for communication is to decrease uncertainty and equivocality due to the characteristics of communication task so as to encourage communication competence. Uncertainty is related to the lack of information. Formal information systems, task forces and connection roles are factors created by organizations in order to facilitate the flow of information to reduce uncertainty. The ability to convey the sufficient amount of correct information is the main role of media in reducing uncertainty. For situations of ambiguity, equivocality is associated with meaning of negotiation. In addition, people in an organization must find structures that enable a cycle of rapid information among them to cope with equivocality in order for sense to appear (Daft et al., 1984). The ability to process rich information is the responsibility of media in coping with equivocally. There is different ability among different media to convey rich information (Daft et al., 1987). In communication, it is found that task difficulty and variety is relative to the quantity of

information needed to be processed. In other words, there is a direct relationship between task complexity and content; the more complex or varied the task and the more uncertain the communication content. Consequently, it requires more information to decrease uncertainty to reach an enhanced result. On the other hand, equivocal tasks have a tendency to have more ambiguous information. Both sides of the communication divide usually struggle to infer those clues according to their own experiences.

Moreover, misunderstanding is likely to happen as a result of the differences in individual experiences (Draft & Macintosh, 1981). To make matters worse, it is difficult to interpret or represent the content in regulations for the duration of communication (Daft et al., 1984). Analyzable task contain more regular information because of more rules and procedures. In contrast, in the un-analyzable task, the content is usually more personal and has a smaller number of cues, and more particular and unprepared (Daft et al., 1984). While the content is un- analyzable, the information in it tends to be unclear and irregular and the accurate coding system, such as rules or mathematical report, will not be appropriate in such kind of communication tasks (Daft &Macintosh, 1981). The people need media with higher richness for instance face to face for low analyzable task because in such location fast feedback will illuminate the questions arising in communication and the possibility of completing the entire task satisfactorily is higher.

In addition, Media Richness Theory, sometimes known as Information Richness Theory, is a framework that can be used to describe a communications medium by describing its ability to duplicate the information sent over it. For example, a phone call will not be able to transfer visual social cues such as gestures; unlike video conferencing, which is able to communicate gestures, it is less suitable at least to some extent. More specifically, based on media richness theory, a richer format of media is suitable for a more ambiguous and uncertain task. It is based on contingency theory and information processing theory. Basically, it explains that richer, more personal means of

communication are generally more effective at communication than leaner, less rich mediums. This makes the theory interesting in the areas of psychology, as well as knowledge transfer.

The term “information richness” is defined by Daft and Lengel (1984) as “the ability of information to change understanding within a time interval” (p. 58). Communications that can overcome different frames of reference and clarify ambiguous issues to promote understanding in a timely manner are considered richer. Communications that take a longer time to convey understanding are less rich. According to Daft and Lengel’s theory, media richness should have four characteristics as follows:

1. The ability of medium to urgent feed back
2. The amount of cues and channels available
3. Variety of language such as body language, voice tone and intonation
4. The amount of purpose focused on the receiver.

All in all, if the medium has a bigger social presence as it will create much newness and heat in communication, because of the bigger number of channels.

2.17 BLOOM TAXONOMY THEORY

Figure 2.9 gives the revised version of Bloom's taxonomy (Anderson, 2001)

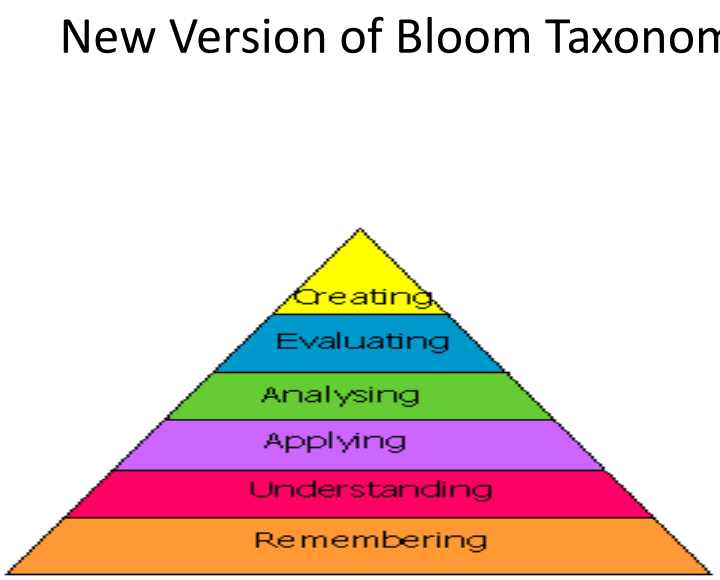

Figure 2.9. The new version of Bloom's Taxonomy.

The image displayed in Figure 2.9 portrays a revision of Bloom's taxonomy that is designed in such a way as to help teachers understand and implement standard-based curricula. A two dimensional framework that focused on knowledge and creative processes has been developed by a team of cognitive psychologists, curriculum specialists, teacher educators and researchers. The two dimensional framework lays out what students are expected to learn in school while exploring curricula from three unique perspectives: cognitive psychologists (learning emphasis), curriculum specialists and teacher educators (C&I emphasis) and measurement and assessment experts (assessment emphasis). This "revisited" framework allows one to connect learning in all areas of the curriculum.

2.17.1 BLOOM'S TAXONOMY OF LEARNING DOMAINS

According to a group of educationists, led by Benjamin Bloom (1956) there is more than one type of learning behavior. Three domains of educational activities can be identified.

- **Cognitive**: mind skills (Knowledge)
- **Affective**: development in feelings or emotional areas (manner)
- **Psychomotor**: physical or bodily skills (Skills)

Domains can be considered as categories. Instructors often refer to these three categories as KSA (Knowledge, Skills and Attitude). This classification of learning behaviors can be reflection of "the purposes of the training procedure." Specifically, after the instruction session, the pupil should have acquired new skills, knowledge and/or attitudes.

2.17.1.1 Cognitive Domain

As Bloom (1956) has stated, the cognitive domain includes knowledge and the development of brain abilities. This contains the remembrance or identification of unambiguous truths, practical models and concepts that serve in improving intellectual skills and capabilities. There are six main groups beginning from the simplest behavior to the most complex. The categories can be regarded as levels of difficulty. Before going to the next level, the first one must be mastered.

Moreover, according to Seif (2003) since the objectives of the cognitive domain deal with mental activities this domain can be considered the most important domain compared to others.

Table2.1*: Bloom's Taxonomy explained.*

Category	Example and Key Words
Knowledge: Recall data or information	**Examples**: Recite a policy. Quote prices from memory to a customer. Knows the safety rules. **Key Words**: defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces, selects, states.
Comprehension: Understand the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words.	**Examples**: Rewrites the principles of test writing. Explain in one's own words the steps for performing a complex task. Translates an equation into a computer spreadsheet. **Key Words**: comprehends, converts, defends, distinguishes, estimates, explains, extends, generalizes, gives Examples, infers, interprets, paraphrases, predicts, rewrites, summarizes, translates.
Application: Use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the work place.	**Examples**: Use a manual to calculate an employee's vacation time. Apply laws of statistics to evaluate the reliability of a written test. **Key Words**: applies, changes, computes, constructs, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses.
Analysis: Separates material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences.	**Examples**: Troubleshoot a piece of equipment by using logical deduction. Recognize logical fallacies in reasoning. Gathers information from a department and selects the required tasks for training. **Key Words**: analyzes, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates
Synthesis: Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.	**Examples**: Write a company operations or process manual. Design a machine to perform a specific task. Integrates training from several sources to solve a problem. Revises and process to improve the outcome. **Key Words**: categorizes, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, revises, rewrites, summarizes, tells, writes.
Evaluation: Make judgments about the worth of thoughts or materials.	**Examples**: Select the most helpful explanation. employ the most qualified candidate. Give details and rationalize a new financial plan. **Key Words**: appraises, compares, concludes, contrasts, criticizes, critiques, defends, describes, discriminates, evaluates, explains, interprets, justifies, relates, summarizes, supports.

2.17.2 WHY MOBILE TECHNOLOGY SHOULD BE INTEGRATED INTO CLASSROOM LEARNING

The integration of mobile technology in distance learning or traditional classroom environments is explored by this research. Specially, it explores the usage of W/H tools like PDAs and Smart phones for data services such as Wireless Access Protocols (WAP), Short Message Service (SMS) and Wireless Markup Language (WML) in higher education. The WAP protocol has gained worldwide status for data services because of its thin-client architecture and tool autonomy. Despite W/H device attractiveness with students, not much has been done to enhance e-learning with these tools. Learning on W/H machines will never be a substitute for classroom or other electronic learning methods. However, mobile technology complements and attaches value to the existing learning models like the social constructive theory of learning with technology (Brown & Campione, 1996) and conversation theory (Pask, 1975).

Learning can be improved by the use of information and communications technology (ICT) especially when combined with more learner-centered instruction (Kaplan, 2001; Zhu, 2003), or convenience, where learning and exchange with the instructor can happen asynchronously at the learner's own pace or on an as-needed basis (Palloff & Pratt, 2001). Additionally, since wireless devices are very individualized and collaborative communications instruments they give faculty flexible devices for complementing the existing technologies and extending the learning outside the classrooms and homes from remote places such as airports or trains where learners are far away from computers and the Internet (Virvou & Alepis, 2005).

One explanation for why m-learning systems may not have been broadly grown in education is the widening concern among faculty and administrators on the feasibility of the W/H tools in online programs. The integration of W/H tools into pedagogy

increase worries between faculties about their usefulness in education. For instance, some faculty asks about the necessity of learning at the airport or a train station with all the environmental distractions. However, several studies have been done to test the role of W/H tools for learning.

2.18 SUMMARY

After defining ICT tools and the concept of "e-learning", the different ICT tools were classified under different headings. The literature review in the first part emphasized the major responsibility of ICT tools in the teaching and learning of the English language. Among ICT tools, the Internet is the most important for helping English teachers and students outside of class. ICT tools can be used innovatively to improve subject content competencies and present much wanted language practice to students. Research done on ICT use in English teaching portray positive results.

Young (2002) and Ofsted (2002) asserted that ICT tools that contain the Internet present more opportunities and benefits to language learners. According to Oliver, (2003) much assistance could be obtained by using ICT tools in teaching and learning of English. According to Kopyc (2006), the number of teachers using technology to improve their teaching is not high, but for those teachers who do choose to integrate it then the content must mix correctly with pedagogy (Mishra & Koehler, 2005). While many theories posit how students learn, the ones that pertain best to this research study are the Media Richness Theory and Bloom's Taxonomy Theory. Both of these theories work well to explain students' ability to learn with the integration of media. The following chapter will outline the research method utilized in this study and how the research was carried out.

CHAPTER III

METHODOLOGY

3.1 INTRODUCTION

In this chapter, the quantitative and interview data of the research are discussed in terms of the research questions posed. For the qualitative portion of the study, information on the population and sample used in conjunction with the variables are defined and explained, as well as the instruments used and their reliability.

Regarding the data of this research, the participants of the study are explained. The overall purpose of this chapter is to provide a detailed synopsis of how this research was carried out.

3.2 RESEARCH QUESTIONS

Research questions are questions that narrow the purpose statement to specific questions that the researcher seeks to answer (Creswell, 2012). In this study, the researcher designed three main research questions that shaped the focus of this study. They were as follows:

1. Is there any significant difference between the learning scores of EFL learners in message text and paper text in learning English vocabulary amongst high school students?

2. Is there any significant difference between the learning satisfaction of high school students using new vocabulary in English via text messaging as an instructional medium and those using the traditional method?

3. Is there a significant relationship between the students' level of satisfaction as a result of the use of text messaging and their degree of achievement?

4. Why can SMS learning affect on Learning scores?

5. Why can SMS learning affect on learning satisfaction?

3.3 NULL HYPOTHESES

Based on the research questions identified above three null hypotheses were formed. They are:

1. There is no significant difference between the learning scores of EFL learners in message text and paper text in learning English vocabulary among high school students.
2. There is no significant difference between the learning satisfaction of high school students using new vocabulary in English via text messaging as an instructional medium and those using the traditional method.
3. There is no significant relationship between the students' level of satisfaction with the use of text messaging in vocabulary learning and their level of achievement.

3.4 RESEARCH VARIABLES

Variable is a characteristic of an organization or an individual that can be measurable or observable by the investigator. Moreover, it can be different depending on the individuals or organizations. In this study, several variables played an important role. At first, it determined how the independent variable (IV) affected the dependent variables (DV). After that, the researcher tried to control extraneous variables in order to increase the research result quality.

Two independent variables were utilized in this study: 1) text messaging and 2) paper text strategy as an instructional medium. Based on those, the dependent variables for this study were the learning of new English vocabulary words and satisfaction with learning. Aside from correlating those variables, this study also worked to determine what relationship existed between the degree of achievement as a result of the use of text messaging and the students' level of satisfaction.

In addition, in this study some variables affected each other as follows: content of learning sent by SMS vs. the traditional method (having hard copy of learning content as a text message) were independent variables. Vocabulary and satisfaction with learning were dependent variables because they could be affected by the content of learning sent by SMS and hard copy. As Clayton (2003) said, media interaction and relationships between students and the instructor can be effective on the process of learning.

According to Keller (1983) motivation including attention, relevance, confidence and satisfaction and interest of students to the content and outcomes of learning can be seen as moderator variables because they can affect the result of study. Intervening variables such as students' English knowledge and the condition of students' family and so on are ignored in this study. In the Iranian school some students have a different background in their learning of English. For instance, some of them come from international schools and/or have extra English classes out of school.

3.5 RESEARCH DESIGN

Figure 3.1 illustrates the research design for this study.

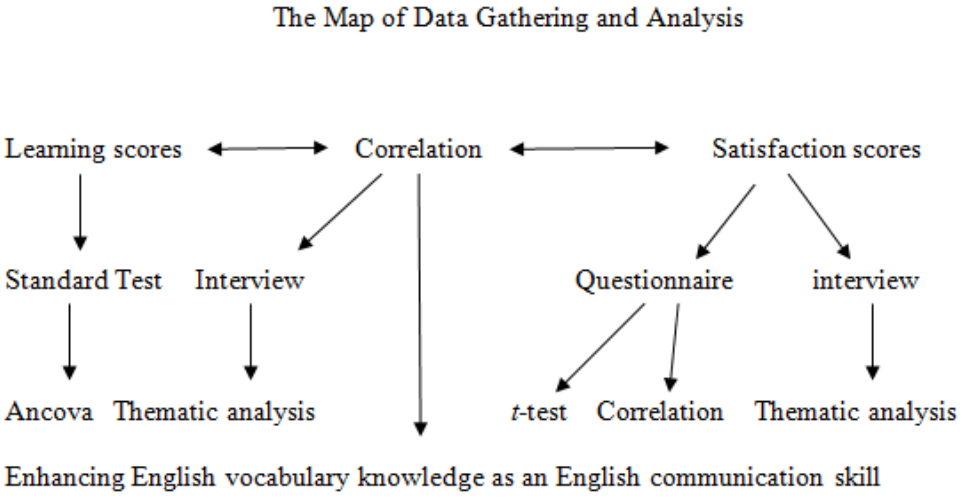

Figure 3.1: Methodology Map of research design for the study.

As Figure 3.1 shows, in the quantitative phase of this research, vocabulary learning was measured via a standardized test provided from the administration of education in both the pre-test and post-test phase of this research for both the control and experimental groups. The results of the pre-test and post-test were analyzed through the SPSS statistical software utilizing the ANCOVA statistical procedure.

Satisfaction with learning was then measured by a constructed questionnaire adopted from Tuckman (1999) and carried out in both the control and experimental group (see appendices A & B). An independent sample test (*t*-test) in SPSS was used for analyzing the data relating to satisfaction scores. The relationship between vocabulary and learning satisfaction was correlated via the Pearson product moment correlation coefficient.

For obtaining in-depth data, interviews were conducted in order to determine why SMS learning could affect vocabulary and satisfaction with learning (RQ4 & RQ5). The information obtained from the interviews was analyzed through an inductive thematic analysis process. The aim of the interviews was to obtain a deeper understanding of the data.

3.5.2 USE OF THE QUANTITATIVE METHOD IN THIS STUDY

3.5.2.1 Experimental Design

As Taillor (2005) has stated, experimental research follows the "significant" more closely than any other method. Conditions are rigorously controlled. The researcher is able to manipulate the experimental variables. Moreover, cause and effect relationships can be confirmed using the experimental method. In other words, it describes what will be when conditions are scientifically controlled (Borg, Gall & Gall, 1993). Direct manipulation of the independent variable and control of extraneous

variables are necessary when conducting experimental research. Attempts are made by the researcher to keep constant all variables with the exception of the independent variables. Extraneous variable must be controlled so that the researcher will be able to determine to what degree the independent variable is related to the dependent variable.

3.5.2.2 Quasi Experimental

A quasi experimental design was used in this study. A quasi experimental design is when the researcher has limitation about selecting of data (Creswell, 2012). Creswell and Miller (2002) note a quasi-experiment is an empirical study used to estimate the causal impact of an intervention on its target population. Quasi-experimental research shares similarities with the traditional experimental design or randomized controlled trial, but they specifically lack the element of random assignment to treatment or control. Instead, quasi-experimental designs typically allow the researcher to control the assignment to the treatment condition, but using some criterion other than random assignment (convenience sample procedures).Quasi-experiments are subject to concerns regarding internal validity, because the treatment and control groups may not be comparable at baseline. With random assignment, study participants have the same chance of being assigned to the intervention group or the comparison group. As a result, differences between groups on both observed and unobserved characteristics would be due to chance, rather than to a systematic factor related to treatment (e.g., SMS learning). Randomization itself does not guarantee that groups will be equivalent at baseline. Any change in characteristics post-intervention is likely attributable to the intervention. With quasi-experimental studies, it may not be possible to convincingly demonstrate a causal link between the treatment condition and observed outcomes. This is particularly true if there are confounding variables that cannot be controlled or accounted for

In this study, the goal of the quasi experimental design was to identify the potential of text messaging as a selected variable in relationship to vocabulary learning and learning satisfaction.

In the second stage, an interview data was employed to gather text data through individual semi-structured interviews, to assist in obtaining information as to why certain external and internal aspects, tested in the first phase, may be major predictors of the students' vocabulary and satisfaction with learning. This approach was chosen became the quantitative data and results provide only a general picture of the research problem; for example, how text messaging assists students to amplify dependent variables such as learning and satisfaction score. The interview data and its analysis helped purify and provide details of those statistical outcomes by exploring participants' visions in greater depth.

The main concern in this design pertains to the qualitative method, since the qualitative research signified the main feature of data collection and analysis in the study. This research also focused on in-depth explanations of quantitative results by exploring six maximal variation cases. A smaller quantitative component goes first in the sequence and is used to reveal the predicting power of text messaging on learning satisfaction and learning scores. The quantitative and interview data were integrated while selecting the participants for analysis and for developing the interview questions that were based on the results of the statistical tests. The results of three instruments (standard test, questionnaire and interview) were also integrated during the discussion of the outcomes of the whole study.

In other words, there are few kinds of experimental designs based on selecting the sample. Usually, the researcher can select the sample of study randomly. This kind of experimental study is called a "true experiment". However, sometimes, there are limitations for selecting samples. In this situation, the investigator will have to select the

sample, as it is available. This kind of study is known as a quasi experiment because the researcher will not have any choice in selecting the sample except for using the available sample.

This study employed a quasi-experimental design because of mentioned limitations. The quasi-experimental study was carried out with 41third year volunteer high school students who were selected and willing to participate in the experiment. Before the beginning of the experiment it was checked that all the participants had mobile phones that they carry with them at all times. The model and the features of mobile phones used were not important in this experiment because any mobile phone can receive and display SMS messages.

For comparison of vocabulary learning (learning scores)amongst the control and experimental groups, with consideration of pretest and protest, Ancova was used in order to examine any significant difference between control and experimental group in vocabulary learning.

The content of learning (new English vocabulary) was sent to students in the control and experimental group in two ways. For the control group, students just received the hard copy of learning content. It means the new English words used in text (proverb, comic joke) were accessible for them when it is printed out on paper (like booklet) and was submitted to students. In the experimental group, the exact same content was sent to them via SMS in few stages. Thus, the difference between the control and experimental groups was just soft vs hard copy of the study content.

3.5.3 PARTICIPANTS

The quasi-experimental study was carried out with 41third graders from two classes at the Iran School of Kuala Lumpur. Both male (N = 13) and female (N = 28) high school students were included in the sample who had the same teacher.

A permission letter was provided and sent to parents by the researcher (Appendix 6). For those students whose parents agreed to allow them to participate, 21 students indicated they would like to be in the experimental group and the remaining 20 were willing to participate in the control group. It should be mentioned that students in the two groups was not random. Inclusion in this research was dependent on the students' willingness to participate, their possessing a mobile phone and the permission of their parents to allow them to participate.

3.6 POPULATION AND SAMPLE

The population of this study consisted of students enrolled at the Kuala Lumpur Iranian School, located in Kuala Lumpur, Malaysia. The students at this school are all Iranian nationals who are residing in Kuala Lumpur with their families who have come for the purpose of work or studies. From the students enrolled in this school, the researcher focused on third grade high school students (16-18 years old) who are studying two hours of English per week, as part of their overall curriculum. Outside of these two hours of English language learning per week, the remaining instruction is provided in Persian.

They type of sampling employed in this research is called convenience sampling. Due to the sampling method employed in this research, the researcher cannot say with confidence that the individuals participating in the research are representative of the total population. However, the selected sample can help make available valuable information regarding the research questions and hypotheses posed.

3.6.1 TARGET POPULATION AND SAMPLE

In order to gather the data from interviewees, purposeful sampling was used in order to obtain participants for this research. It involved purposely-selecting persons to

learn to comprehend the central phenomenon (McMillan & Schumacher, 1994; Miles & Huberman, 1994). Six participants from the experimental group who had responded to the satisfaction questionnaire with upper and lower grades were selected for the interview analysis. They were interviewed for the purpose of gaining deep data.

The participants in this study were chosen based on statistically significant difference results (high scores and low scores) related to learning satisfaction from some students who have learned the content of learning via text messaging in comparison to the traditional group (having hard copy of learning content).

The outcomes of the pilot survey helped create stability and internal consistency reliability, face and content validity of the questionnaire. Based on the pilot survey results the questionnaire items were modified.

The pilot test was done in order to find out what factors were involved in learning of English vocabulary via SMS in distance environment as follows:

A week before the survey was made accessible online, participants took delivery of a notification from the researcher about the significance of their input for the study. This assisted in preventing a low response rate, which is typical for web-based surveys. To reduce the answer rate error and request a high answer rate of the survey, a three stage follow-up sequence was employed. To those participants who did not answer by the set date (1) five days after handing out the survey URL, a reminder was e-mailed; (2) ten days later, the second reminder was e-mailed; (3) two weeks later, the third reminder was e-mailed stating the significance of the participant's contribution to the study.

The second set of interview data in the study concentrated on explaining the results of the statistical tests, obtained from standard test and questionnaire. For collecting and analyzing the deeper data, the interview was utilized. The primary technique was conducting open ended structured interviews with six students, one from

each group (higher and lower grade in control and experimental groups). Interviews with the significant others of these selected participants were conducted but just the result of six students was purposefully used for analysis.

Creswell (2012) said that different data sources are necessary in an analysis in order to triangulate findings. Because of validation of information gained during the interviews academic transcripts were employed. The participants were requested to grant consent for access to their transcripts, while the information regarding the courses and grades were obtained via the researcher's advisor.

The interview protocol included ten open-ended questions that were pilot tested. The content of the protocol questions was based on the results of the statistical tests of the relationships between the learning satisfaction and learning score. The questions focused on the issue of amount of learning (knowledge, understanding, application) based on the levels of Bloom's taxonomy. The procedure was pilot tested on three students chosen from the similar target population, but after that kept out from the complete study. The participants were debriefed on the interview procedure for the sake of their own clarity and the relevance of the study.

Before the scheduled calling time, the participants received interview questions, and were notified that the interview will be transcribed verbatim and tape-recorded.

Respondents had a chance to review and, if needed, verify the contents of the interview after transcription. The interview analysis followed the steps laid out by Creswell (2012):

(1) The data were investigated by reading through the transcripts and writing memos.

(2) The data were coded by segmenting and labeling the text.

(3) The codes were used to develop themes by aggregating similar codes together.

(4) Common themes were connected together.

(5) A narrative was constructed.

Data analysis engaged developing a detailed description for each case of the six participants from the experimental group who responded to the satisfaction questionnaire with upper and lower grade, representing a typical response from each level.

During the analysis an investigator placed the case within its context so the case description and themes were connected to the particular activities and situations engaged in the case. Based on this analysis, the researcher made available an elaborate narration of the case, using either a detailed perspective about some events, chronology, or major incidents followed by an up-close description.

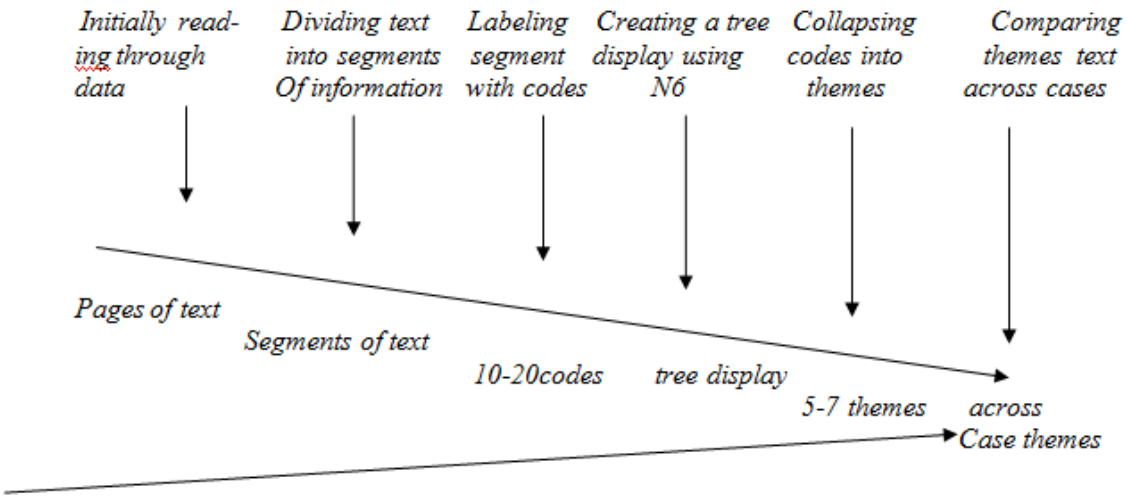

Figure 3.3: The visual model of qualitative analysis for this study (Adapted from Creswell, 2012 and Lu, 2003).

3.6.2 HOW TEXT MESSAGE DESIGN WAS ARRANGED IN THIS STUDY

Figure 3.4 illustrates the text message design based on the ARCS model:

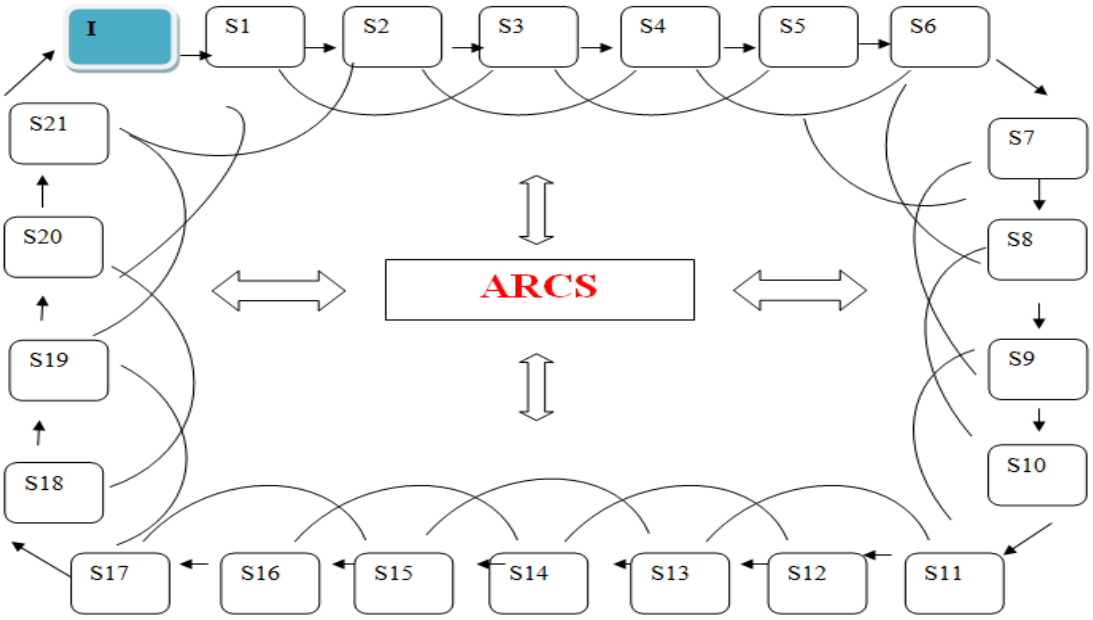

Figure 3.4: Text messaging design based on ARCS model.

With consideration of motivational theory using the ARCS model (Figure 3.4), text messages were designed and sent to the students in the following way:

The new vocabularies related to a part of third grade English book (Relevance as a second component of the ARCS model) were used in some interesting sentences (Appendix 2). Attention as a component of motivation theory (ARCS model) was considered when using interesting sentences. Then, it was sent to all students who were included in the experimental group. The messages were sent to the first student, who was instructed to read, paraphrase and forward this message to one of his / her classmates (e.g. one to three, two to four and so on). The last student will forward the message to the teacher for confirmation as per fixed appointment. In this way, the

content of learning (SMS) were cycled among students in the experimental group and finally received by the teacher so that the teacher was sure that all students in the experimental group have received the SMS. Each SMS will have some new vocabulary used in some interesting sentences and was sent twice during the day, one in the afternoon and another one three hours later. Based on content of the book used for the third level of high school there are 210 new words, so it took 70 days to finish the words. It should be mentioned that the experiment was conducted during the second semester of session 2010/2011, so the number of vocabulary items were divided by half. As a result around 100 new English vocabularies were sent to students over 60 days and the rest of semester the new vocabularies were sent to students duplicable as a reminder via using them in some interesting sentences as already mentioned. Meanwhile, for the experiment (teaching via SMS) the researcher emphasized to the students in the experimental group that they were not to send the intended SMS to other students in the control group. The researcher could control intervening variables that may affect the result of the study. Moreover, the expenditure of sending SMSs' to the students was paid for by the instructor so that the research was not compromised by participants who were unwilling to send the SMS to their friends out of fear of "losing their credit".

In conclusion, about the procedure of carrying out laboratory /field work, it should be mentioned that forty one students (third grade high school by same teacher) had been chosen as a sample based on convenience sampling procedure and divided into two groups: the experimental and control group. Both groups have been manipulated by text messaging and hard copy (Appendix 4) material for two months and the result of manipulate has been evaluated on learning scores (RQ1) and learning satisfaction (RQ2) by Ancova and *t*-test. Then, the relationship between learning scores (Appendix 1) and satisfaction scores (Appendix 2) has been measured by correlating Pearson product moment coefficients (RQ3). Afterward, interview data has been analyzed by thematic

analysis for answering RQ4 and RQ5. Finally, the results of all analyses were combined to determine the overall findings.

3.6.3 DIFFERENCES OF MATERIAL IN HARDCOPY AND SOFT COPY

In this study, the participants were chosen derived from the statistically significant difference results related to learning satisfaction from some students who have learned the content of learning via text messaging in comparison to the traditional group (having a hard copy of learning content e.g., booklet). It means that the content of learning (sentences with new English words) was delivered for the experimental group in softcopy by SMS on the mobile phone and via hard copy (text on paper) for the control group.

3.6.4 INTEGRATION OF LEARNER MOTIVATION PLANNING INTO TEXT MESSAGING DESIGN

The motivational model of ARCS design consists of a set of categories of motivational concepts and strategies combined with the research on human motivation, which is related with successful motivational practices. It consists of the four ARCS categories of motivation (attention, relevance, confidence, and satisfaction), which have many further subcategories of concepts and strategies. These categories consist of one ARCS model out of two major components.

In this study, some criteria were used regarding how the new English words will be used inside the text. In other words, used text will be based on Comics (jokes), celebrity's proverb and daily needs of students. The researcher believed that providing new English words inside the text based on the above criteria and sending it by SMS, according to the instructional design, will engage students and they will experience an

attractive environment for learning of vocabulary—as mentioned in the motivation theory section.

3.6.4.1 The ARCS Model

Keller (1983, 1984, 1987) reported that the problem solving of the ARCS model approach is to design the learning environments for students' motivation to learn. This model has two major parts. The first part represents the components that make up motivation while the second part focuses on the process that helps formulate motivational enhancements for a given set of learners. The role that these two parts play hand in hand allow for an outline of students motivational characteristics to be derived in a given learning environment where subsequent learning plans can be formed that are suitable for them.

According to the ARCS model of Motivation Theory attention should be considered during the instructional design. So the researcher tried to provide this in the learning environment by using text based on comics (jokes), celebrity's proverb and daily needs of students. Then, relevance as a second part of the ARCS model of motivation theory was considered through the content of learning new vocabulary based on whatever they must pass in their final exam. In this research, the SMS content was first sent to one student who then passed it on to another student, and the teacher, based on how he/she understood the content of the SMS. In this part, confidence as another part of the ARCS model was achieved by students who had received feedback of other students' comprehensions (Keller, 1999). The teacher or researcher analyzed the content of learning for each student. Finally, student satisfaction was measured through a satisfaction questionnaire and interview questions. In sum, the first three parts of the ARCS model of motivation theory were considered as independent variables and satisfaction as a last part of ARCS model was a dependent variable in the study.

3.6.4.2 Issues and Problems in Motivation

Educators know the challenge of motivating and supporting learner motivation and the difficulty of finding reliable and valid methods for motivating learners. Keller (1999a, 1999b) stated that this challenge is provided by the ARCS model of motivation which provides guidance for analyzing the motivational characteristics of a group of learners and designing motivational strategies based on this analysis. After providing a general idea of the model, some recent developments, including a basic approach to applying it, and how it may be included into lesson planning will be described in the following sub section.

3.6.4.3 Characteristics of the ARCS Model

The ARCS model is divided into four categories:

(A) Attention – does the lesson capture the interest of the learner?

(R) Relevance – is the lesson relevant to learner needs? Does the learner see any perceived value in what is being taught?

(C) Confidence – this comes as a result of the learners feeling that they can successfully accomplish the task at hand.

(S) Satisfaction – are the learners satisfied with the content being passed on, and how it is passed on?

3.7 INSTRUMENTS

In this study, for obtaining the result of manipulation that has been created by the researcher for the experimental group, whether the use of text messaging affected the learning scores or not (the first research question), the researcher used a standard test provided by the Ministry of Education in Iran. As already mentioned, the researcher

used pre-test and post-test to control the effects of intervening and mediator variables that can affect the results of the study. In this study, the result of middle exam has been considered as *pre-test* and the result of final exam as *post-test*. Moreover, for assessment of the second research question (Is there any significant difference between the learning satisfaction of new vocabulary in English via text messaging as an instructional media versus the traditional method among high school students?) two questionnaires were constructed (adopted from Tuckman, 1999; see Appendix 8) by the researcher in order to assess whether or not there is any difference in satisfaction with learning between the control and experimental groups. In order to obtain validity of the questionnaire, the survey was passed to a few university lecturers in order to obtain their opinions. This was in conjunction with a triangulation of the interview data from the students and observations.

3.7.1 Approaching the Planning of a Questionnaire

3.7.1.1 Types of Questionnaire Items

The questionnaires of learning satisfaction in both groups (control and experimental) were designed based on Bloom's Taxonomy of motivation and media richness theory by the researcher and the following factors were considered as main factors. The factors assessed consisted of the following items:

1-Spent time

2-Goals

3-The degree of learning difficulty

4-The degree of learning content retrieval

5- The degree of learning content accessibility

6-Motivation to continue study

7-The application of study

8-Relating the new knowledge to previous one

9-The design of learning text

10-Rewards after learning (reinforcement of learning)

11- New device for learning (how the new device can attract the interest of students).

12. Create self confidence among students

13. The capability to interface new situation among students

14-Better communication among the people

15- The feeling of independent in personal life.

3.7.1.2 The Reliability and the Validity of the Questionnaire

In this study, a pilot test was conducted in order to obtain some summary ideas about satisfaction of learning among a small sample (N = 41) of students after some manipulation in the experimental group.

According to Kaplan and Saccuzo (2001) internal validity refers to the capability of assessment (questionnaire) in different times with the same results. In this study, for obtaining validity of the questionnaires, limited questionnaires were distributed amongst 14 students (eight in the experimental group and eight in the control group). After a few days had passed, the same number of questionnaires was re-distributed to the same students. Once the questionnaires were collected, the researcher compared the answers of the questionnaire between the first and second distribution to help provide external validity.

After collecting the interview and questionnaire responses, the researcher consulted with experts in the field of TESL, Psychology and Instructional Technology in order to obtain external validity. Finally the original questionnaires were provided as follows:

Reliability Statistics for Group One (traditional group) from15 Items

Cronbach’s alpha in traditional group in main study (N=20) was .871

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.891	.890	15

Cronbach's alpha in traditional group in pilot study (N = *8*) was .871

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.871	.872	25

Reliability Statistics for Group Two (SMS group) of 15 items

Cronbach's alpha in SMS group (experimental) in main study (N = 21) was .884

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.836	.839	15

Cronbach's alpha in SMS group (experimental) in pilot study (N = *8*) was .840.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.840	.840	25

In general, for obtaining reliability, Cronbach's alpha was used with a confidence level of 95%. These values of Cronbach's alpha are acceptable because they exceed .60.

3.7.1.3 Questionnaire Measurement

The statistical computer software of SPSS was utilized in order to organize and understand the data obtained from the quantitative portion of this study. The data of learning satisfaction were analyzed by using *t*-test and correlation. First data were analyzed via a formula and the outcomes were checked by SPSS. The statistical software (SPSS) displays calculated data in tables with a report below each table. After doing this, the general report was given and interpretations were made based on the generated report. The report provided includes descriptive statistics with graphs and tables, which consist of bar charts, pie graphs, the mean, standard deviation and the variance of raw data. After collecting the data they were analyzed by means of descriptive and also inferential statistics.

3.8 ANALYSIS OF THE DATA OBTAINED FROM STANDARD TEST, AND QUESTIONNAIRE

Field (2009) holds that four assumptions should be met before one decides to run parametric tests: (1) the data should be measured on an interval scale, (2) the participants should be independent that is to say their performance on the test is not affected by the performance of other students, (3) the data should enjoy normal distribution and (4) the groups should have homogeneous variances. Along the same line, the present data is measured on an interval scale and the participants perform independently on the tests. The assumption of normality is also met. The values of skewness and kurtosis should be within the ranges of +/- 2.

In this study, ANCOVA was used because the researcher wanted to know whether there was any significant difference between the learning score of students learning new vocabulary in English via text messaging as an instructional media versus the traditional method (paper text) among high school students (RQ1).

To reiterate, the null hypothesis for this research was that there were no significant differences between the learning score of the EFL high school learners in the message text and paper texts groups in learning English vocabulary. Likewise, the alternative hypothesis was that there was a significant difference between the learning score of the high school EFL learners in message text and paper text in learning English vocabulary.

3.8.1 INTERPRETATION OF ANCOVA

A one-way between-groups analysis of covariance was conducted to compare the effectiveness of two different interventions designed to increase participants' vocabulary acquisition. The independent variable was the type of intervention (SMS strategy), and the dependent variable consisted of scores on the vocabulary learning after the intervention was completed. Participants' scores on the vocabulary learning in pre-test was used as the covariate in this analysis.

Preliminary checks were conducted to ensure there was no violation of the assumptions of normality, linearity, homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariate. After adjusting for pre-intervention scores, there was significant difference between the control and experimental groups on post-intervention scores on the vocabulary learning scores.

3.8.2 INTERPRETATION OF *T*–TEST

For RQ2 (Is there any significant difference between the learning satisfaction of new vocabulary in English via text messaging as an instructional media versus the traditional method among high school students?), *t*-test was used to test whether there was a significant difference between the learning satisfaction of new vocabulary in

English via text messaging as an instructional medium versus the traditional method among high school students.

The procedure of obtaining *t*-test is as follows:

Comparing *t* obtained with the critical value shows that the critical value will be greater than or smaller than the *t* obtained so the null hypothesis will be rejected or will be accepted. Therefore, the researcher will conclude whether there is any significant difference in learning satisfaction of EFL learners in message text and paper text in learning English vocabulary among high school students (RQ2). The SPSS *t*-test results will also show that the *t* value calculated and the corresponding *p* value. In addition, the result of *t*- test will be checked by SPSS outcome.

Ho: There are no differences between means of satisfaction scores in two groups ($\mu 1 = \mu 2$).

H1: There are differences between means of satisfaction scores $\mu 1 \neq \mu 2$ (a 2-tailed test) $\mu 1 > \mu 2$ or $\mu 1 < \mu 2$.

The *t* value or *t* obtained will be calculated to find out whether it is greater than *t* critical and is in the rejection zone, so the null hypothesis will be rejected and the alternative hypothesis of H1 will be retained. If calculated *t* value is smaller than *t* critical, it will be in the retain zone and, the null hypothesis will not be rejected.

Comparing *t* obtained with the critical value showed that the critical value was greater than the *t* obtained so the null hypothesis was rejected. Therefore, the researcher concluded there is a significant difference between the learning satisfaction of new vocabulary in English via text messaging as an instructional media and traditional method among high school students. The SPSS *t*-test results also showed the *t* value calculated and the corresponding *p* value. In addition, the result of *t*-test was checked by the SPSS outcome.

3.8.3 CORRELATION DESIGN

According to Taylor (2005), correlation design is an effort to show relationships between two or more variables. They are classified as negative or positive and have a tendency to show strong or weak relationships. This relationship supports the researcher in explaining, controlling and predicting phenomena. Correlation does not show cause and effect. It simply indicates that relationships occur between two or more variables. On the other hand, the method permits the researcher to analyze several variables at once or a combination of variables to determine how they may affect certain behavior. Correlation helps us by explaining, predicting, and controlling conditions that affect us in our society.

3.8.3.1 Pearson Product Moment Correlation Coefficient

Since in Pearson Product Moment Correlation Coefficient, the researcher will have to have the same scale for intended variables, the researcher had to change ordinal scale to an interval scale for learning satisfaction in order to measure the correlation between learning score and learning satisfaction. Thus, the researcher considered a Likert Scale as follows: 1 = strongly disagree, 2 = Disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = Agree, 6 = strongly agree

All satisfaction scores were added together for each student separately. In this way, each student had a satisfaction score. The learning score was calculated when the student attended the post-test; thus, each participant had a learning score. By putting the satisfaction score and learning score in the X, Y axis and using the correlation formula, the researcher calculated the correlation between them. At this part, the Pearson Coefficient of Correlation was used to test the strength of the relationship between the degree of achievement as a result of the use of text messaging and the students' level of

satisfaction. Pearson Product Moment Coefficient of Correlation, *r* was calculated through the following formula:

$$r = \frac{SS_{XY}}{\sqrt{SS_{XX}\ SS_{YY}}}$$

3.8.3.2 Interpretation of the Correlation

The linear correlation coefficient showed the degree of achievement as a result of the use of text messaging and the students' level of satisfaction were positively correlated. If the value of *r* was not close to one the researcher could infer that the degree of achievement as a result of the use of text messaging and the students' level of satisfaction in this case were not strongly correlated. If the coefficient of determination was close to one, it indicated that the degree of achievement as a result of the use of text messaging and the students' level of satisfaction in this case were strongly correlated. Next the significance of *r* obtained was tested by stating the null hypothesis that it was identified that whether there was any significant relationship between the degree of achievement as a result of the use of text messaging and the students' level of satisfaction or not. The level of significance for this test was set to .01.The researcher calculated *t* to apply this test. The null hypothesis was the linear correlation coefficient between the degree of achievement as a result of the use of text messaging and the students' level of satisfaction is zero; that was $\rho = 0$.

The alternative hypotheses were:

Linear correlation coefficient between the 2 variables is less than zero, $\rho < 0$

Linear correlation coefficient between the 2 variables is more than zero, $\rho > 0$

Linear correlation coefficient between the 2 variables is not equal to zero, $\rho \neq 0$

Ho: $\rho = 0$ (The linear correlation coefficient is zero).

H1: $\rho > 0$ (The linear correlation coefficient is positive).

The next step was to determine the rejection and non-rejection regions. So by looking at the *t* distribution table, the critical value was identified. The SPSS result also confirmed the findings and showed whether there was any significant relationship between the degree of achievement as a result of the use of text messaging and the students' level of satisfaction.

3.8.4 CONCLUSION OF THE CORRELATION

The value of the test statistic was greater than the critical value; it fell in the rejection region. So, the researcher rejected the null hypothesis and concluded that there was a significant, positive linear relationship between the degree of achievement as a result of using text messaging and the students' level of satisfaction. It means that the more the students were satisfied when using text messaging as a training medium, the higher their achievement.

3.9 RESEARCH QUESTION RELATED TO INTERVIEW DATA

For interview data the research questions are as following

1. Why can SMS learning affect learning score?
2. Why can SMS learning affect learning satisfaction?

3.10 OBJECTIVES RELATED TO INTERVIEW DATA

Based on the above research questions, the objectives of the interview data of the study were:

1. To explore why SMS learning can affect learning score.
2. To explore why SMS learning can affect learning satisfaction.

3.11 HOW THE INTERVIEW DATA WERE GATHERED AND ANALYZED

The instrument for gathering data was open-ended interview (Appendix 3). Interview questions were provided by the researcher. The number of students (sample) who participated in the interviews was a total of six students (N = 6) who got higher and lower scores for the factor of learning satisfaction in the experimental group. Each participant was interviewed separately, and their answers were recorded via an MP3 recorder and were transcribed on paper in Persian and then later translated into English. The translation process to Persian and vice versa was done again by another translator to obtain validity of transcribed text.

3.11.1 THE INTERVIEW PROCEDURE

Table 3.1 sums up a good interviewing process in a checklist adapted from Gay and Airasian (2003; cited by Creswell, 2012). The questions on the checklist symbolize that organization should be taken into consideration before, during and after the interview.

A total of six interviews were conducted, by the researcher, with students in the high school. After obtaining permission from the school district and the school principal, permission was then obtained from the students themselves, their parents or guardians and the teachers. The selection of interview participants was based on those that the researcher sampled having the ability to talk from different perspectives (maximal variation sampling). Six participants from the experimental group were identified to partake in the interview sessions. The purpose of choosing three students from each level of satisfaction (high and low level) was so that diverse perspectives representing complex views on the topic of vocabulary learning could be obtained.

Once the students who would participate in the interview procedure were identified and proper permission obtained, the researcher carried out the interview procedure while bearing in mind the need to respect the rights and views of each of the

interview participants. All interview sessions were recorded and transcribed and notes were also taken during the interview sessions.

Table 3.1: *A Checklist for Interviewing Source. Gay and Airasian (2003)*

A checklist for interviewing
Who will participate in your interviews?
What types of interviews are best to conduct?
Is the setting for your interview comfortable and quiet?
If you are audio taping, have you prepared and tested the equipment?
Did you obtain consent from the participant to participate in the interview?
Did you listen more and talk less during the interview?
Did you probe during the interview? (ask to clarify and elaborate)
Did you avoid leading questions and ask open-ended questions?
Did you keep participant focused and ask for concrete details?
Did you withhold judgments and refrain from debating with participant about their views?
Were you courteous and did you thank the participant after concluding the interview?

For analyzing data obtained from the participant interviews, a thematic analysis was used as follows:

3.11.2 INTERVIEW

The interview questions were semi-structured and the participants involved were interviewed in Persian. The interview was done with six students to find out their level of English words learning against the levels of Bloom's Taxonomy and why they were satisfied when they were learning English words by text messaging (RQ4: Why can

SMS learning affect vocabulary learning? RQ5: Why can SMS learning affect satisfaction with learning?). Interviews were done face to face, separately, and were recorded.

Kvale (1983) highlighted that the qualitative research interview was "an interview, whose purpose is to gather descriptions of the life-world of the interviewee with respect to interpretation of the meaning of the described phenomena" (p. 174). To answer the second research question, in-depth data were needed. This is where the use of the satisfaction questionnaire, developed by the researcher, came into play. Data gathered from these two instruments were evaluated to ascertain whether there was any compatibility between learning by SMS and just having hard copy of text.

An inductive thematic analysis was used to find out the participants' underlying concepts and themes frequently mentioned. These general themes and underlying concepts were put into a few categories, which were then organized into a coherent and meaningful finding.

Interview responses were classified and general concepts and key ideas were put in different categories. The key ideas in each category were coded. In addition, a brief profile was prepared for each participant that reflected the central themes or subjects. These issues were put in the appropriate category if they were new.

The next step was a review of all the categories in order to find commonalities and differences. The similar categories overlapped each other and became one category. Then a list of categories was prepared. To arrange the list, prioritizing must be done. The next step was member checking; the thematic analysis (list of categories) was brought down to a few subjects. Then, the results were demonstrated in report form.

Inductive thematic analysis was chosen to analyze the data of the present study, because according to Boyatzis (1998), this study is a "data driven approach", that is, by using raw answers, some codes and themes were made. According to Ekrami (2001),

thematic analysis is inductive, that is, the researcher does not impose the themes; rather, they emerge from the data. Since the nature of this study is the same, choosing an inductive thematic analysis was appropriate. Daly, Kellehear, and Gliksman (1997) identified that thematic analysis is important in describing the phenomenon. Since the major purpose of this study was to describe the comprehension of students about vocabulary learning among Iranian students in Kuala Lumpur, choosing this kind of analysis was helpful.

With consideration of the materials in Table 3.1 and other things such as level of satisfaction and the methods of vocabulary learning, the interview questions were made by the researcher in order to get a deeper understanding of students' backgrounds (Appendix 3).

3.12 TRIANGULATION

In this study, a triangulation questionnaire and interview questions were used for data gathering and analysis. Moreover, the design of this study was a quasi experimental approach consisting of some instruments such as standard test, questionnaire and interview.

In detail, the results of the standard test, questionnaire and interviews were compared in order to determine whether they support each other or not. In this study, the instrumental multiple cases (Stake, 1995) served the purpose of "illuminating a particular issue" (Creswell, 2012, p. 485); such as learning scores and the satisfaction relationship between them. They were described and compared to provide insight into an issue. The primary technique was conducting in-depth semi-structured interviews with six participants (who held higher and lower grades in the control and experimental groups). Creswell (2012) said that different data sources are necessary in study analysis in order to triangulate findings. Because of validation of information gained during the

interviews academic transcripts were employed. The participants were requested for consent to access their transcripts, while the information regarding the courses and grades were obtained via the teacher, who held the role of the researcher's advisor.

3.13 RESEARCH PERMISSION AND ETHICAL CONSIDERATIONS

Moral issues were considered at each phase in the study. In fulfillment with the rules of the Administration of Education (AE), the agreement for carrying out the research was obtained (appendix 6 & 7). The Request for Review Form was filed, providing information about the principal investigator, the project title and type, source of funding, type of review requested and the number and type of participants required. Application for research permission contained a description of the project and its significance, methods and procedures, participants and research status. The informed consent form developed provided participants and their parents with information on their rights, how their rights were guaranteed, their freedom to participate in this study or not and an acknowledgement of their rights and their ability to remove themselves from the study at any time. Numerically coding each returned questionnaire, and keeping the responses private, assured confidentiality of participants. Interview participants were assigned fictitious names for use in their description and reporting of the results.

3.14 SUMMARY

In this chapter, both the quantitative and interview data of the research were laid out in terms of the research questions posed. For the interview data, information on the population and sample used in conjunction with the variables were defined and explained, as well as the instruments used and their reliability. Regarding the standard test and questionnaire data of this research, the participants of the study were explained.

The overall purpose of this chapter was to provide a detailed synopsis of how this research was carried out. In next chapter, the findings of the research will be presented.

CHAPTER IV

FINDINGS

4.1 INTRODUCTION

In this chapter, the data are presented and analyzed according to the research questions identified. In the beginning, demographic information and also the findings are presented. The standard test and questionnaire findings of this study are presented first followed by the findings from the interview data of this research. A linking between the two portions of the study will also be made.

In this study, the research also focused on the interview protocol in order to provide in-depth data from the students of the Iranian School in Kuala Lumpur, Malaysia. The data in this chapter were analyzed in two ways: quantitatively and qualitatively. In other words, the quantitative and interview data will triangulate each other. The researcher wants to know whether the results provided from the quantitative data will be in parallel to interview data or not. In this way more specific interview questions will be presented together within the interview data analysis. The results of the interviews, which complete the findings of this study, will be presented in summary with a linking of common themes.

4.2 OBJECTIVES

This study had the following research objectives:

1. To examine significant differences between the learning scores of EFL learners in message text and paper text in learning English vocabulary among high school students.
2. To find out significant differences in learning satisfaction of EFL learners in message text and paper text in learning English vocabulary among high school students.

3. To investigate the significant relationship between the degree of achievement as a result of the use of text messaging and the students' level of satisfaction.
4. To explore why SMS learning can affect learning score.
5. To explore why SMS learning can affect learning satisfaction.

4.3 DEMOGRAPHIC INFORMATION OF THE PARTICIPANTS

The participants of this study were drawn from the Iranian High School in Kuala Lumpur, Malaysia. The total number of participants who took part in this study was 41 (13 female and 28 male) from two classes taught by the same teachers using the same materials. The gender of students was ignored in this study as it has been mentioned in the limitation of study. As mentioned before, the samples were not chosen randomly (not random assignment) because of the following reasons.

- The number of students with same teachers was limited.
- There is just one Iranian High School in Malaysia.

Thus, the design of this study consisted of a quasi-experimental method and the methodology was a quasi-experimental design.

The interviews were not formal; they were open-ended and the researcher considered giving the interviewees extra time if required; such that if the participants wanted to mention something they considered relevant then they would not be prohibited due to a time limitation. The interviews were semi-structured allowing them to be informal, free and without a set structure. Interviews were done face to face. The cases were interviewed separately, and a voice recorder was used for all interviews conducted as part of this research. All participants were informed that their answers were recorded. Aside from being recorded, the interviews were transcribed as well, and translated from Persian into English.

The researcher developed the survey instruments (questionnaire and interview questions) for this study himself. An inductive thematic analysis was used to find out the participants' underlying concepts and themes frequently mentioned. These general themes and underlying concepts were grouped into categories. Then, these categories were organized in a coherent and meaningful manner.

Responses to the interviews were classified with the general concepts and key ideas lumped into different categories. The key ideas in each category were coded. The shared problems among the cases were identified. Then, the researcher's interpretation was added. These issues were put in the appropriate category if they were new.

The next step was a review of all the categories in order to find similarities and differences. The similar categories overlapped each other and became one category. Then a list of categories was prepared. Prioritizing the categories was done in order to arrange the list.

The next step was member checking; the thematic list of categories was returned to a few participants. Then, the result was demonstrated in a report form. Creswell (2012) pointed out: "member checking is a process in which the researcher asks one or more participants in the study to check the accuracy of the account. This check involves taking the findings back to participants and asking them (in writing or in an interview) about the accuracy of the report" (p. 252).

4.4 RESULTS

4.4.1 ANALYSIS FOR RESEARCH QUESTION ONE (RQ1)

RQ1: Is there any significant difference between the learning scores of EFL learners in message text and paper text in learning English vocabulary among high school students?

For RQ1 the researcher tried to examine whether there was any significant difference in the learning scores between the experimental and control group; thus, the ANCOVA method was used to analyze the data received pertaining to this research question. In using the ANCOVA statistical method of data analysis, the first step taken was a test for normality. As a first step for checking normality under the table of descriptive, the "5% trimmed mean" terms were checked. As shown in Table 4.2. The trimmed mean (19.18) and the original mean (19.09) are not too different from each other. This shows the extreme scores are not having a strong influence on the mean. As a second step for checking normality under the table of Test of Normality the Shapiro-Wilk value was also checked. This value was .56. A non-significant result (sig. value of more than .05) indicates normality of the distribution of scores. This is also supported by an inspection of the normal probability plots (labelled normal Q-Q plot).

Table 4.1: *Test of Normality*

Tests of Normality

		Kolmogorov-Smirnov [a]			Shapiro-Wilk		
	group	Statistic	df	Sig.	Statistic	df	Sig.
Final	sms	.242	21	.002	.826	21	.002
	2	.191	20	.055	.907	20	.056

a. Lilliefors Significance Correction

Table 4.2: *Descriptive Statistics Table*

Descriptives

	group			Statistic	Std. Error
Final	sms	Mean		19.0952	.22192
		95% Confidence Interval for Mean	Lower Bound	18.6323	
			Upper Bound	19.5582	
		5% Trimmed Mean		19.1878	
		Median		19.0000	
		Variance		1.034	
		Std. Deviation		1.01697	
		Minimum		16.50	
		Maximum		20.00	
		Range		3.50	
		Interquartile Range		1.38	
		Skewness		-1.132	.501
		Kurtosis		1.029	.972

4.4.1.1 Skewness and Kurtusiss

As displayed in Table 4.2, the values of skewness and kurtosis are within the ranges of +/- 2.This means that symmetry of the distribution of scores and the peakedness of the distribution is normal. In other words, the value is large enough to claim that our scores are normally distributed.

4.4.1.2 Levene's test of equality of error/ test of homogeneity of variance

Table 4.3 depicts the results regarding Levene's test of equality of error variance. As shown in the table, the value is .988. Since the obtained value is < p = .05, which is not statistically significant, than we can know that the variances are equal and the assumption has not been violated.

Table 4.3:.*Levene's Test of Equality of Error Variance*

Levene's Test of Equality of Error Variances[a]

Dependent Variable:Final

F	df1	df2	Sig.
.000	1	39	.988

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + MiddTerm + group

4.4.1.3 Test of Linearity

A test of linearity was also conducted on the data for RQ1. Figure 4.1 portrays the results obtained from this statistical procedure. As Figure 4.1 displays, the assumption of a linear relationship between the dependent variable and covariates for both groups are met.

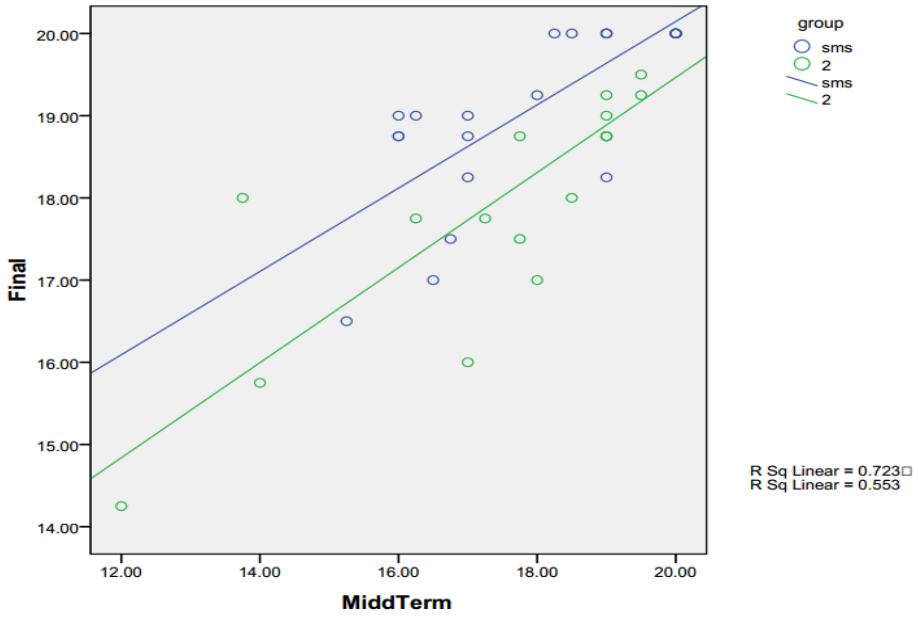

Figure 4.1: Test of Normality for dependent variable and covariates for both groups.

4.4.1.4 Homogeneity of Regression Slopes

The assumption of homogeneity of regression slopes concerns the existing relationship between the covariate and the dependent variable for each of the groups. As shown in Table 4.4, the level of the interaction is not statistically significant (.604) which indicates that we have not violated the assumption.

Table 4.4: *Tests of Between-Subject Effects*

Tests of Between-Subjects Effects

Dependent Variable:Final

Source	Type II Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	52.048[a]	3	17.349	28.575	.000
Intercept	33.495	1	33.495	55.168	.000
group	.451	1	.451	.743	.394
MiddTerm	44.522	1	44.522	73.329	.000
group * MiddTerm	.166	1	.166	.274	.604
Error	22.464	37	.607		
Total	14311.000	41			
Corrected Total	74.512	40			

a. R Squared = .699 (Adjusted R Squared = .674)

In this study, ANCOVA was used because the researcher decided to know if there was any significant difference between the learning scores of students learning new vocabulary in English via text messaging as an instructional media versus traditional method (paper text) among high school students (RQ1). The hypothesis relating to this research question are re-stated as follows:

Ho: There is no significant difference between the learning scores of EFL learners in message text and paper text in learning English vocabulary among high school students.

H1: There is a significant difference between the learning scores of EFL learners in message text and paper text in learning English vocabulary among high school students

A one-way between-groups analysis of covariance was conducted to compare the effectiveness of two different interventions designed to increase participants' vocabulary and satisfaction. The independent variable was the type of intervention (SMS and paper text method), and the dependent variable consisted of scores on the vocabulary learning after the intervention was completed. Participants' scores on the vocabulary learning in pre-test were used as the covariate in this analysis. The results of this one-way analysis of covariance are presented in Table 4.5.

Table 4.5: *Test of Between-Subjects Effects*

Tests of Between-Subjects Effects

Dependent Variable:Final

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	51.881[a]	2	25.941	43.558	.000	.696
Intercept	34.559	1	34.559	58.030	.000	.604
MiddTerm	44.522	1	44.522	74.758	.000	.663
group	7.161	1	7.161	12.023	.001	.240
Error	22.631	38	.596			
Total	14311.000	41				
Corrected Total	74.512	40				

a. R Squared = .696 (Adjusted R Squared = .680)

Preliminary checks were conducted to ensure that there was no violation of the assumptions of normality, linearity, homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariate (detailed in previous sections). After adjusting for pre-test scores, there was a significant difference between the control and experimental groups on post-test scores on the vocabulary learning scores, $F(1.38) = 12.2$, $p = .001$, partial eta squared =.24. There was a strong relationship between the pre-intervention (pre-test) and post-intervention scores (post-test) on the vocabulary learning, as indicated by a partial eta squared value of .66.Table 4.6 displays the means for this analysis.

Table 4.6: *Table of Means for the Two Groups*

	Unadjusted Mean		Adjusted Mean	
Group	*M*	*SD*	*M*	*SD*
A	19.04	1.06	19.09	0.165
B	18.20	1.52	18.20	0.169

Table 4.7: *Descriptive Statistics*

Descriptive Statistics

Dependent Variable:Final

gr...	Mean	Std. Deviation	N
sms	19.0476	1.06835	21
2	18.2000	1.52738	20
Total	18.6341	1.36485	41

4.4.2 ANALYSIS OF RESEARCH QUESTION 2 (RQ2): INDEPENDENT SAMPLE *T*-TESTS – COMPARISON OF MEANS IN SATISFACTION LEARNING

Research question two aimed at determining if there was any significant difference in learning satisfaction of EFL learners using message text than those using

traditional paper text in learning English vocabulary amongst high school students. An independent sample *t*-test was run in order to determine if any significant differences existed regarding the learner satisfaction of EFL learners between SMS text and paper text in learning the English vocabulary. The hypotheses held for RQ2 are stated in the following.

Ho: There are no differences in the mean scores between the experimental group (SMS) and control group (Paper text)

H_1: There are differences in the mean scores between the experimental group (SMS) and control group (Paper text)

Comparing the *t* value obtained of (3.83) with the critical value of *t* (1.75) showed that the *t* obtained was greater than the critical value so the null hypothesis was rejected. In other words, using the interesting materials with the experimental group was effective enough to generate a significant difference between the two groups with regard to satisfaction scores.

Table 4.8: *Comparison of Means and Standard Deviations*

Control group	Experimental group
N1 = 20	N2 = 21
Mean 1 = 52.71	Mean 2 = 43.80
S1 = 11.73	S2 = 14.85

t = 2.12

An independent-sample *t*-test was conducted to evaluate whether there is any significant difference among the learning satisfaction of EFL learners in message text and paper text in learning English vocabulary among high school students or not.

Table 4.9: *Mean and Standard Deviation Between Experimental and Control Group.*

Group Statistics

	group	N	Mean	Std. Deviation	Std. Error Mean
Total	sms	21	52.7143	11.73091	2.55989
	2	20	43.8000	14.85934	3.32265

Table 4.10: *Independent Samples Test*

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Total	Equal variances assumed	3.841	.057	2.138	39	.039
	Equal variances not assumed			2.125	36.150	.040

Table 4.11*: Independent Samples Test*

Independent Samples Test

		t-test for Equality of Means			
				95% Confidence Interval of the Difference	
		Mean Difference	Std. Error Difference	Lower	Upper
Total	Equal variances assumed	8.91429	4.17012	.47942	17.34915
	Equal variances not assumed	8.91429	4.19441	.40886	17.41971

There was a statistically significant difference among the learning satisfaction of EFL learners in the experimental group (M = 52.71, SD = 11.73) and the control group (M = 43.80, SD = 14.85), t (36.15) = .040, p < .05 (two tailed) in learning English vocabulary among high school students. The mean increase in the experimental group (SMS group) was 18.5 with a 95% confidence level.

Table 4.12: *Learning Satisfaction*

	Levene's Test		*t*-test for Equality of Means						
	F	Sig.	t	df	Sig.	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Equal variances assumed								Lower	Upper
	4.19	0.047	3.83	37	.00	18.49	4.82	8.73	23.25

According to the ARCS model, satisfaction is the last process of this model where motivation is the output of the process. As many scholars note, intrinsic motivation can make learning stable and deeper. Moreover, extrinsic motivation "can combine synergistically with intrinsic motivation, particularly when initial level of intrinsic motivation are high" (Amabile, 1993, cited by Saeednia, 2011, p. 212).

In detail, the motivational model of the ARCS design consists of a set of categories of motivational concepts and strategies combined with the research on human motivation which is related with successful motivational practices. This part of the ARCS model contains an overview of the general concept of motivational design. It consists of the four categories of motivation (attention, relevance, confidence and satisfaction), which have many further subcategories of concepts and strategies. These categories consist as one ARCS model out of two major components.

With consideration of motivation theory based on the ARCS model, the researcher believed that if, during learning, learners can have the component of motivation such as attention, relevance, confidence and finally satisfaction they will automatically be motivated.

4.4.3 ANALYSIS OF RESEARCH QUESTION 3(RQ3): CORRELATION OF LEARNING AND SATISFACTION SCORES

Before answering *RQ3*, some explanation about correlation design is necessary. In this study, Pearson Product Moment Correlation Coefficient was used because the researcher had to have the same scale for intended variables; hence the researcher had to change an ordinal scale to an interval scale for learning satisfaction in order to measure the correlation between learning scores and learning satisfaction. Thus, the researcher considered a Likert Scale as follows:

1 = strongly disagree

2 = Disagree

3 = somewhat disagree

4 = somewhat agree

5 = Agree

6 = strongly agree

All satisfaction scores were added together for each student separately. In this way, each student had a satisfaction score. The learning score was calculated when the student attended the post-test. So, each of them had a learning score. By putting satisfaction scores and learning scores in the X, Y axis and using a correlation formula, the researcher was able to calculate the relationship between them. For this part the Pearson coefficient of correlation was used to test the strength of the relationship between degree of achievement as a result of the use of text messaging and the students' level of satisfaction. The Pearson Product Moment Coefficient of Correlation, *r* was calculated by the following formula:

$$r = \frac{SS_{XY}}{\sqrt{SS_{XX}\ SS_{YY}}}$$

The linear correlation coefficient showed whether the degree of achievement as a result of the use of text messaging and the students' level of satisfaction was

positively correlated or not. If the value of *r* was not close to one, we could infer that the degree of achievement as a result of the use of text messaging and the students' level of satisfaction in this case were not strongly correlated. If the coefficient of determination was close to one, it was indicated that the degree of achievement as a result of the use of text messaging and the students' level of satisfaction in this case were strongly correlated.

Next the significance of *r* obtained was tested by stating the null hypothesis that it was identified whether any significant relationship existed between the degree of achievement as a result of the use of text messaging and the students' level of satisfaction or not. The level of significance for this test set to .01.The researcher will calculate *t* to apply this test. The null hypothesis will be that the linear correlation coefficient between the degree of achievement as a result of the use of text messaging and the students' level of satisfaction is Zero, that is $\rho = 0$.

The alternative hypothesis is:

Linear correlation coefficient between the 2 variables is less than zero, $\rho < 0$.

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Linear correlation coefficient between the 2 variables is more than zero, $\rho > 0$

Linear correlation coefficient between the 2 variables is not equal to zero, $\rho \neq 0$

Ho: $\rho = 0$ (The linear correlation coefficient is zero).

H_1: $\rho > 0$ (The linear correlation coefficient is positive). The next step was to determine the rejection and non-rejection regions. By looking at the *t* distribution table, the critical value was identified. The rejection and non-rejection regions for this test were shown by graph.

Research question three (*RQ3*) asked if there is any significant relationship between the degree of achievement as a result of the use of text messaging and the students' level of satisfaction. The value of the test statistic was greater than the critical

value, and did not fall in the rejection region. Therefore, the null hypothesis was rejected and it could be concluded that there was medium significant level of relationship between the degree of achievement as a result of using text messaging and the students' level of satisfaction. The SPPS results obtained from the formula are shown in the Table 4.13 also the result of SPSS confirmed the resulted obtained from formula as follows:

Table 4.13: *Correlation between satisfaction scores and learning scores*

Correlations

		Final	Satisfaction
Final	Pearson Correlation	1	.430"
	Sig. (2-tailed)		.005
	N	41	41
Satisfaction	Pearson Correlation	.430"	1
	Sig. (2-tailed)	.005	
	N	41	41

**. Correlation is significant at the 0.01 level (2-tailed).

As Table 4.13 shows, the relationship between satisfaction scores (as measured by a Likert Scale) and learning scores (as measured by the final exam scale) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity existed. There was a medium, positive correlation between the two variables, $r = .43$, n = 41, $p < .05$, with high levels of satisfaction scores associated with high levels of learning scores.

Table 4.14: *Results of the Pearson Product –Moment Correlation Analysis*

	Final	Satisfaction
Final		
Pearson Correlation	1	.430*
Sig. (2-tailed)		.005
N	41	41
Satisfaction		
Pearson Correlation	.430*	1
Sig. (2-tailed)	.005	
N	41	41

In the next step, the interview session included six participants who had the highest and lowest scores in satisfaction with learning. Three participants were selected from each range in the experimental group. In order to help provide validation of the information gained during the interview session, academic transcripts were employed. The participants were requested to provide their consent for accessing their transcripts Information regarding the courses and grades were obtained via the researcher's advisor.

The interviews were aimed at providing a deeper level of meaning regarding how learning satisfaction among the third year high school students, and whether it was in parallel with the result of the learning satisfaction questionnaire or not. And if so, what were the reasons for the discrepancy. It was hoped that the interview findings support and enrich the quantitative data via deeper understanding of participants' voices. This interview was also designed to triangulate quantitative data gathered by the questionnaire completed by participants.

In the beginning of each interview the topic of the thesis and the purpose of the interview were posed. Since the preliminary interview had been carried out, the interviewer also explained to the interviewees that this interview session was more specific and aimed at clarifying the students' responses to the questionnaires. It should

be mentioned that an MP3 recorder, accompanied with taking notes by the researcher, was used throughout all sessions. The first interview was started on September 4, 2012, and took the research four days to complete it. The interview questions were open ended and copied items listed in the questionnaire.

The interview findings are explained here based on each research question.

4.5.1.1 Research Question four

For answering research question four: "why can SMS learning affect learning scores?" the selected students were interviewed and the data were derived from their answers in the interview (see Appendix 3). Following the scripted questions, the researcher asked the selected students if they had any other comments to add to their answers.

The first four themes were identified from the interview sessions based on the students' answers to the interview questions (see Appendix 3). The first four themes identified consisted of:

1. Learning English is a necessity.
2. Interested in using cell phones.
3. Like to attend in the present research.
4. Believing SMS learning is effective.

Table 4.14 outlines some general themes of RQ1 from the qualitative perspective.

Table 4.15: *Some general themes of RQ4: "Why can SMS learning affect learning Scores?"*

Themes	Percent	Frequency
1. learning English is a necessity	6	100%
2. Interested in using cell phones	4	66.66%
3. like to attend in the present research	4	66.66%
4. Believing SMS learning is effective	5	83.33%

The first major theme, "learning English is a necessity,**"** was made by referring to the literature review and the interview data. The interview findings revealed that six out of six English language students (100%) believed that learning English is a necessity.

Participant one (Sina) about "learning English is a necessity" said that:

Well, it's not a big thing, it's just a knowledge that people need to learn. I mean it's something necessary that you can't do some of your tasks if you don't know it.

Next, participant two (Amir) stated:

English is easy to learn, I, myself, hate every language including English and Farsi. I don't like learning new languages but among Arabic, English and Farsi that I know, I like English more than others because it's easy to learn rather than Farsi.

The third participant (Milad) said that: "No idea emm... it's a language emmm....in my opinion learning English is very necessary." The fourth participant (Parsa) opined "Learning English is necessary, because if you don't know English you cannot communicate with other people in the world."

The fifth participant (Aref) about "learning English is a necessity" said that:

Learning English is important emm ... well it's better to say learning English is necessary. And it doesn't matter if you like it or not because it's an international language so everyone should learn it.

In parallel to Aref's responses literature has some beliefs as follows:

Farhadi (2006) and Dahmardeh (2011) said that learning English as an international language is a necessity nowadays. All people need to know the international language not for going to university or getting a good job and promotion, but also for survival. As English is a foreign language in Iran and since the current methods have not worked very well yet, finding the best way of teaching it is the most important job.

The learning and teaching of English as a lingua franca in the 21st century have been obviously transformed in the era of globalization and technological development (Block & Cameron, 2002). The possibility of interaction and mobility among people around the world has been dramatically increased by new technologies and ICT tools, overcoming many barriers of time and space.

The sixth participant (Emad) about "learning English is a necessity" said that: "Yes I like it because comparing to other languages like Arabic the grammar is easier to learn emm... and it's necessary to learn."

Participant one (Sina) regarding "learning English is a necessity" said that he not only did not like SMS but paper and he preferred to learn languages in society.

The second major theme that emerged from the interview data and literature review was "interested in using cell phones". During the interview, it was revealed that four out of the six selected participants (66.66%) were interested in using cell phones. They expressed their opinions as follows:

The second participant (Amir) under the theme "interested in using cell phones" said that he prefers to learn everything with computers or mobile, or something like these. He prefers new technologies and new ways rather than old ways for learning. He said that he prefers email to SMS. But between SMS and paper he chose SMS. He preferred email in computer because the screen of his mobile was small.

The third participant (Milad) about "interested in using cell phones" said that

"Well, it didn't help me to learn anything because emm… I was lazy about that….. I mean in my opinion it wasn't interesting."

The fourth participant (Parsa) about "interested in using cell phones" said that he liked SMS learning and he was interested in this kind of learning. He continued that:

Sometimes when I'm out and need to check something, for example I want to buy something and I don't know the meaning of some word so in this times I usually use my dictionary that I have in my phone.. so it is available everywhere.

The fifth participant (Aref) about "interested in using cell phones" said that he preferred mobile rather than paper because he thought that mobile learning was easier than paper learning. He said that:

It was very emm ...good for me and emm… it (mobile) helped me a lot because I can use dictionary in my mobile. All my mobiles had dictionary and I usually use dictionary for about 10 to 20 times a day.

The last participant (Emad) said that he was interested in mobile learning. Specifically, he stated:

I think SMS and mobile are better than paper because you have it with you anywhere and anytime and you can use it anytime but paper is not …. you don't have it with you everywhere .

As Roschelle, Sharples, and Chan (2005) concluded, learning management may best be enhanced by a combination of mobile technologies and human assistance. The study shows that in vocabulary learning via mobile phone, instructors should create three optimal conditions. First, a reward-based scheme which arouses the learners' motivation to study the lessons. Second, a tracking mechanism assisted by, for example, WebCT's tracking system, can be supplemented in the m-learning projects or any call software under the principle of not intruding into users' privacy. This kind of tracking mechanism should allow instructors to monitor learners' learning and detect certain behaviors in order to intervene in time to provide assistance (Hwu, 2003). It may also

increase the reading frequency of the lessons and maximize the efficacy of the self-study approach. Third, an interaction function, which allows students to use the language and teachers to give feedback, should be supplemented. This kind of student-initiated use of language, supported by teachers, can foster vocabulary acquisition by increasing the "cognitive involvement load" (Hulstijn, 2001).

As Roschelle et al. (2005) concluded, a gadget that maximizes exposure to the target language might give the best enhanced learning management. Hence, the mobile phone can be a more effective medium for self-learning English vocabulary than the paper material in that it arouses learners' motivation, which in turn increases frequency of reading the lessons.

The next theme which emerged was "like to attend in the present research". Participant one (Sina) said that he is lazy about these things, he likes to attend in the present research but he thinks that he will not continue until the end of research. He believes that he cannot learn English alone; he needs to be in class with a few other people to learn English.

Participant two (Amir) indicated that he preferred paper rather than mobile phones, while participant three (Milad) stated:

> *"If it is by SMS no I won't volunteer but if it is by mobile for example I have some words in my mobile with me and I'm trying to learn them but SMS, NO."*

Participant four (Parsa) said that he would "like to attend in the present research." He likes it because he thinks that it will help him if he takes part in the research. Participant five (Aref) said that he thought that it was a duty but it was good and he learned something and when the researcher asked him if he wants to be a volunteer for this research he said, "Emm… I don't think I will be a volunteer."

Participant six (Emad) said that although he is interested in learning English in such a way he prefers to be in society rather than learning alone. He thinks it was good and it helps him to get good marks in the exam.

The fourth major theme inferred from the data was "believing SMS learning is effective". Five out of the six participants (83.3%) asserted that SMS learning is indeed effective.

Participant one (Sina) said that:

> *In my opinion emm ... it's good and effective but the texts, I mean the sentences that was sent for us wasn't interesting. They were a kind of philosophic emm... it was better if the sentences [were] easy or the sentences that we use every day for shopping or ordering food or something like that.*

Participant two (Amir) stated:

> *In my opinion emm… mobile is better than paper because if you use paper for learning you just can write something and go emm… but if you can type like computer or mobile (SMS) it makes you to think more and more . I think SMS learning or something like this em… like email, is more effective than paper because in mobile or computer you can erase and rewrite something better if you want but in paper… emm ... you can't do it.*

Participant; three (Milad) volunteered that:

> *For me it wasn't effective. I mean it was ... but not like that , maybe it wasn't effective because I knew the meaning of the words before. I think it would be more effective and also interesting if the texts [were] connected to each other em ... like short stories.*

Participant four (Parsa) about "believing SMS learning is effective" said that he likes some of those received SMSs a lot that he posts them to his Facebook. He continued by stating:

> *"It was effective and it helped me to learn some new word. I forgot some of that new word but if I see them again I will remember it from those text messages."*

Participant five (Aref) said that he believed the learning was effective because he learned some new vocabulary words through the SMSs.

> *"I believe that it was effective for me because I learned some new words by this (SMS)s."*

Participant six (Emad) said that this SMS learning was effective for him because he had good result in exams by this SMS learning.

Using online communications in learning has many advantages. Reading and writing skills as well as conceptual understanding improve (Imperatore, 2009). Learners develop understanding as well as reasoning abilities and critical thinking. They also gain confidence in using online tools effectively and become more creative. Moreover, learners interpret and reorganize the information gathered to be presented in a different way, and collaborate with others as well (Dorothy DeWitt, Norlidah, Alias, & Saedah Siraj, 2013).

The text messaging SMS Quiz has a lot of potential for future use because of its popularity and the level of cognitive processes. Text messaging appears to be the most effective tool to reduce transactional distance (Moore, 1993) as learners would not feel the online distance of the instructor because they are able to interact fully in personal dialogue with the instructor, and have autonomy over their learning (cited by Dorothy DeWitt et al., 2013). Analyses of both qualitative and quantitative data show that participants have favorable dispositions and perceptions to the use of text messaging as an educational tool. As Bosco and Sum (2007) have stated, the SMS messaging of mobile phones is an instructional tool of great potential owing to its high popularity among young adults. The immediacy and novelty of SMS lessons and their manageable amount of information can foster students' vocabulary learning. Moreover, the positive effect seems to compensate for the constraint of mobile phones' small screens. Future instructional projects via mobile technology should take advantage of M-learning to

increase students' exposure to the target language. To maximize the utility of learning material, software designers as well as paper-based material writers should take learners' needs and learning styles into account. To learners of the 'M-generation', bite-sized but regularly delivered information via mobile phone SMS is manageable while the one-shot massed paper material in a rather traditional manner fails to arouse their interest to study (Prensky, 2005).

This study demonstrates that mobile learning facilitates certain forms of learning that are difficult with a traditional paper-based approach. The specific features of the SMS message via mobile phone arouse learners' motivation. The text messages can be easily sent at pre-determined times with "distributed repetition at optimal intervals" (Baddeley, 1990). They are stored systematically and accessible for later retrieval. The lessons delivered via mobile phone are more appealing to students. Carrying a mobile phone and checking the SMS messages anytime and anywhere is trendy among students, which is absolutely not the case with reading paper-based learning material. By using the word to make a sentence, sending it to teachers via SMS text messaging, and reading the feedback, learners can build a net of well-connected and well-practiced paths and thus retrieve the target word more easily.

Multiple materials and multiple modules can facilitate learning (Chapelle, 2001). The mobile phone, along with other computer technologies, is expanding the list of instructional tools for teachers and students. It can be an alternative instructional tool for learners of special needs or a complementary teaching material that offers multiple learning opportunities. With support from technology advancement, other forms of computer application in second language acquisition are around the corner; for example, quizzes via SMS, a classroom response system using SMS as a tool for conducting language activities, learning projects integrated with more "game" elements, and the

planner function to help students organize their learning (cf. Naismith et al., 2005; Traxler & Riordan, 2003).

4.5.1.1 .1 General Conclusion for Research Question four

As the interview data revealed, media could play its role effectively in the learning field. Although text messaging is lean media, it could be more effective in helping the learning process if it had an interesting design. It can be said that putting new vocabulary inside interesting sentences and sending them by SMS, as a lean media, has the capability to improve learning scores, as suggested by the quantitative results in this study which showed that there was a significant difference between the pre-test and post-test scores among participants in the experimental group. In addition, the results confirmed some ideas mentioned in the literature review, as follows:

According to Heo and Chow (2005), an online electronic component in the education process helps cheer the students up and they have reported that they have felt less threatened or embarrassed to seek help than in the traditional classroom. On the other hand, when the instructor and students are far away from each other and there is distance learning, lean media can be more desired because it can reduce social and emotional cues and therefore can reduce pressure upon people. The other advantage is that students have to rely on their own abilities and it is an important factor in increasing their self-esteem indirectly. In addition, as Li (2005) has pointed out, there is a strong relationship between introduction of ICTs and language learning changes.

Another result of the interviews showed that the participants declare that they can use learnt vocabulary out of class and they believed that after learning by this method (SMS) they could apply learnt words as well. As Bloom (1956) has stated, the cognitive domain includes knowledge and the development of brain abilities. This contains the remembrance or identification of unambiguous truths, practical models and concepts that serve in improving intellectual skills and capabilities. There are six main

groups beginning from the simplest behavior to the most complex. The categories can be regarded as levels of difficulty. Before going to the next level, the first one must be mastered.

4.5.1.2 Research Question Five

For answering the second research question (RQ2) (how SMS learning can affect learning satisfaction) the interview data from the qualitative analysis was used. Especially since the focus of RQ2 was aimed at examining whether SMS learning could affect the learners' satisfaction or not, interviews were deemed as being the most appropriate in obtaining the necessary information needed to answer this question.

Three major themes were identified from the interview data regarding RQ1 (See Appendix 3). These three themes consisted of: enabling them to apply their learned knowledge, available anywhere, anytime and interesting text messaging.

Table 4.16: *Outlines some general themes of the research question one: "Why SMS learning can affect learning satisfaction?"*

Themes	Frequency	Percent
1. Enabling them to apply their learned knowledge	5	83.33%
2. Available anywhere, anytime	4	66.66%
3. Interesting text messaging	4	66.66%

The first major theme "enabling them to apply their learned knowledge" was made by referring to the literature review and interview data. The interview findings revealed that five out of six English language students (83.33%) believed that learning by SMS enabled them to apply their learned knowledge.

Participant one (Sina) felt that he did not learn that much. In his interview session, he stated:

I didn't learn that much but I remember once I saw one of the words that you send me by SMS in a website and it helped me just that time and another thing, since most of the time, I watch movie during, I am listening the dialog of movie, I can use some of [the words] I saw in received text (SMS).

Participant two (Amir) said that he could not use his learned knowledge because he was using paper not SMS. Participant three (Milad) about "enabling them to apply their learned knowledge" said that it was not that very effective for him because he knew the meanings of the word that had been sent to him. He continued:

"It didn't help me because em… I was kind of lazy about it, I mean it wasn't interesting for me."

Participant four (Parsa) stated:

It was effective and it helped me to learn some new word. I forgot some of that new word but if I see them again I will remember it from those text messages.

Participant five (Aref) about "enabling them to apply their learned knowledge" said that it did not help him in his exam, but it was good because he learned new words and he can use those words. Participant six (Emad) noted that this SMS learning was effective for him because he had good results in his exams from this SMS learning.

The data gathered helped confirm the fact that technology, in this case SMS messaging, can be useful in helping to teach students a foreign language. Adedoja, Adelore, Egbokhare, and Oluleye (2013) highlight several preconditions for the successful implementation of technology into the learning environment. These conditions include: providing technical support to students, using a well-designed interface, improving student information and communications technology (ICT) literacy, controlling the messaging and data costs faced by students and improving the capacity of course developers and technical staff. Abu-Al-Aish (2012) declared "students have a positive perspective of using M-learning and they look at it as a support system for traditional class-based learning."

For the second major theme that emerged "available anywhere, anytime", the interview findings revealed that four out of six English language students (66.66%) believed that content of learning is available anywhere and anytime.

Participant one (Sina), who believed in "Available anywhere, anytime," said that:

> *'In compare paper and mobile, I would like to search the word in my mobile When I' m looking for the words I had already learned and in this way, I think I can save my time.'*

Participant two (Amir) about "Available anywhere, anytime" said that he preferred paper rather than mobile. He thinks that mobile is not good for learning but computer is good.

> *If I should choose between mobile or paper, I will choose paper, because paper is like mobile to you can take it everywhere with u emm… because the mobile's screen is small so I prefer paper rather than mobile. I only use my mobile for sending SMS or calling emm ... so in my opinion, I don't like to carry my phone emm… always emm… so I choose to carry paper and learn from paper rather than mobile.*

Participant three (Milad) about "Available anywhere, anytime" said that

> *'If it is by mobile for example I have some words in my mobile with me and I am trying to learn them'*

Participant four (Parsa) stated:

> *Well, I prefer paper rather than mobile, because when you text someone or if someone send SMS for you, you won't check more than one time emm… but the dictionary is good and it helped me a lot for learning. Sometimes when I'm out and need to check something, for example I want to buy something and I don't know the meaning of some word so in this times I usually use my dictionary that I have in my phone.. so it is available everywhere.*

Participant five (Aref) opined that:

> *I prefer computers and mobile rather than paper, because I deal with computer and mobile more than paper or books. Mobile or tablet is available anywhere and anytime so it makes it better and more useful for learning. It doesn't need internet so it's better actually.*

The last participant (Emad) about "Available anywhere, anytime" stated:

> *I think SMS and mobile are better than paper because you have it with you anywhere and anytime and you can use it anytime but paper is not …. You don't have it with you everywhere. It helped me to get high scores in my exam.*

Learning can be improved by the use of information and communications technology (ICT) especially when combined with more learner-centered instruction (Zhu & Kaplan, 2002), or convenience, where learning and exchange with the instructor can happen asynchronously at the learner's own pace, or on an as-needed basis (Palloff & Pratt, 2001). Additionally, since wireless devices are very individualized and collaborative communication instruments they give faculty the flexibility for complementing the existing technologies and extending the learning outside the classrooms and homes from remote places like airports or trains where learners are far away from computers and the Internet (Virvou & Alepis, 2005).

In parallel to the above ideas, Abu-Al-Aish (2012) stated that:

> *Mobile learning technologies and wireless networks are being increasingly used in educational settings. Mobile learning (M-learning) through wireless technology can deliver information access to anyone any time in any place* (p. 20).

Interview findings revealed that four out of six English language students (66.6%) believed that the received text messaging was interesting; which fell under the category of the last theme.

Participant one, who did not believe in necessity of learning English, believed that:

> *The text I received by SMS, they were not interesting enough. They were like philosophic text and understanding of it was difficult, so I had difficulty for paraphrasing. I prefer to learn new vocabulary inside the movie.*

He suggested just having text used inside the dialogs of movies. Literature on integration of technology with interesting content of learning suggested ideas such as requiring interesting technology media to be incorporated into the teaching and learning of English (Al-Jarf, 2004; Hertel, 2003).

Participant two (Amir) had a more positive opinion about the text messages. He stated:

> *In my opinion… some of the sentences were very easy but they were good. The sentences were interesting. I didn't like the paraphrasing and it was just like a duty to me. Paraphrasing helped me think and remember the old knowledge that I have and it connected my previous knowledge to my new knowledge.*

Even though the response of participant three (Milad) did not just focus on the interview question, the information is also important for this study. His response included the following:

> *I think it would be more effective and also interesting if the (SMS)s was connected to each other emm... like short stories or emm... you know like dialogs of good movies.*

In line with participant three, participant four (Parsa) who believed in the necessity of learning English, believed that he likes some of those received (SMS)s a lot that he posts them to his Face book. He continued:

> *It was good and interesting and it would be better if they had used jokes, because it could be more fun and emm... you know fun and learn is good. I was waiting for (SMS)s not only for learning but also I wanted to know that how the research is continuing. Paraphrases were good end effective for me.*

In a similar tone, participant five (Aref) about "interesting text messaging" believed that:

> *They were good, not so easy not so hard emm ... I prefer harder sentences and better and useful words. I liked it and it was interesting because I prefer to learn words in sentences instead of learning words with their meaning. All of them were not interesting and I think it would be better if the (SMS)s were some dialogs from great people or some jokes that make the (SMS)s more interesting.*

Young (2002) and Ofsted (2002) asserted that ICT tools that contain the Internet present more opportunities and benefits to the language learner. According to Oliver (2003), much assistance can be obtained by using ICT tools in the teaching and learning of English.

The sixth participant (Emad), about "interesting text messaging," said that:

> *It was no [not] understandable because it was Proverb emm... it was hard emm … a little. It was that hard that I couldn't paraphrase them without my sister's help. Because the timing wasn't good emm ... I mean I had my exams that time so I was not very interested to receive (SMS)s, I just tried to paraphrase but it took my time a lot.*

According to Mishra and Koehler (2005), teachers who integrate ICT tools in their English lessons must mix content with pedagogy correctly. For his part, Kozma (1994), from the Center for Technology and Learning, puts forth that the use of media and approaches used to incorporate it are undeniably connected. Kozma adds that both media and approaches are components of the instructional design. He further argues that "media must be designed to give us powerful new methods, and our methods must take appropriate advantage of media's capabilities" (p. 16). Moreover, learning via media can be considered as a corresponding development inside which representations are created and methods carried out, sometimes by the learner and sometimes by the medium. By considering its technological abilities, symbol system, and processing abilities, a specific medium "can be described in terms of its capability to present certain operations in interaction with learners who are similarly engaged" (Kozma, 1994, p. 11).

Regarding why students think that SMS as a text messaging is interesting, literature holds some ideas according to the media richness theory. As said by Zack (1993), participants knew when one person would welcome a funny message sent by electronic mail and distinguished as unfriendly by another. The difficulty of the message relates to some degree with the sender's information of the receiver, therefore

it can affect the media use. Isaacs, Walendowski, Whittaker, Schiano, and Kamm (2002) believed that if the sender and receiver have had a great contract of experience running on a given project and communicating repeatedly, they would be capable of communicating very difficult messages in a very accurate way.

4.5.1.2.1 General Conclusion for Research Question Five

As the interview data revealed, there was satisfaction among learners in the experimental group. For its part, the results from the quantitative data showed that there was a significant difference between the experimental and control group. The interview sessions themselves revealed an overall satisfaction of learning via SMS. Thus, it can be said that sending new vocabulary inside interesting sentences and sending it by SMS as a lean media can positively affect learning satisfaction. This result is parallel to Van‘t Hooft and Diaz (2005), whose research found that participants expressed satisfaction with using mobile learning for increasing environmental awareness. Uzunboylu et al. (2008) have also mentioned that the majority of a sample of 217 students liked using mobile devices and regard mobile learning as a fun and valuable learning tool. They added that a review of relevant literature confirms that mobile technologies potentially engage students in creative, collaborative, critical and communicative activities. Although their use varied in applying digital and mobile technologies to environmental topics as mentioned in the literature review.

Motiwalla (2007) believed that wireless data communications in the form of Short Message Service (SMS) and Wireless Access Protocols (WAP) browsers have expanded worldwide attractiveness; yet, not much has been done to expand the usage of these tools in electronic learning. A study by Motiwalla (2007) found the extension of e-learning into wireless/ handheld (W/H) computing machines with the assistance of a mobile learning (m-learning) framework. This framework offers the requirements to develop m-learning applications that can be used to complement classroom or distance

learning. A prototype application was expanded to link W/H tools to three course websites. The m-learning users were pilot-tested for two semesters with a total of 63 students from undergraduate and graduate courses at a university. The students employed the m-learning environment with different W/H tools and outlined their experiences through a survey and interview sessions at the end of the semester. The outcomes from this exploratory study make available a better understanding on the function of mobile technology in higher education.

Quinn (2001) believed that m-learning intersects mobile computing with e-learning; it brings together personal learning with anytime and anyplace learning. With a W/H tool, the relationship between the machine and its holder becomes one-to-one, always on, always there, location aware and personalized (Homan & Wood, 2003). Virvou and Alepis (2005) said that the independence of W/H devices makes available some advantages for the e-learning environment such as permitting students and teachers to use their extra time such as in a moving train or bus to finish their homework or lesson preparation. The same case has been made in the business area on how W/H tools can offer better time management efficiency by changing worker dead-time into a productive activity (Ben Moussa, 2003).

The key characteristics of using a W/H tool for e-learning are its personalization ability and extended reach; this has caught the attention of learners more, particularly adult learners, for whom the work-life balance is critical. W/H machines are able to modify the way students act and cooperate with each other. A typical scenario is a learner who is registered in an e-learning class for an MBA program. Before flight at an airport, he or she can go through class materials or cooperate with classmates and teachers or download an assignment using a wireless PDA tool.

Learning can be improved by use of information and communications technology (ICT) especially when combined with more learner-centered instruction

(Kaplan & Saccuzo, 2001; Zhu, 2003), or convenience, where learning and exchange with the instructor can happen asynchronously at the learner's own pace or on an as-needed basis (Palloff & Pratt, 2000). Additionally, since wireless devices are very individualized and collaborative communications instruments they give faculty flexible devices for complementing the existing technologies and extending the learning outside the classrooms and homes to remote places such as airports or trains stationwhere learners are far away of computers and the Internet (Virvou & Alepis, 2005).

Caruso and Kvavik (2005) asserted that practical evidence of ICT use by undergraduate students demonstrate students who used instant messaging as ICT tools for communication with the instructor and other students achieved enhancement in learning. According to Kozma (1994), media and approaches are inextricably connected. Kozma added that both media and approaches are components of the instructional design. He argued that "media must be designed to give us powerful new methods, and our methods must take appropriate advantage of media's capabilities" (p. 16). Moreover, according to Kozma, learning via media can be considered as a corresponding development inside which representations are created and methods carried out, sometimes by the learner and sometimes by the medium. By considering its technological abilities, symbol system, and processing abilities, a specific medium "can be described in terms of its capability to present certain operations in interaction with learners who are similarly engaged" (Kozma, 1994, p. 11).

4.6 FINDING AND THEORIES

The findings here are parallel with Bloom's Taxonomy as it is said that the level of learning goes up when the learners have more opportunity to practice. In this study, SMS learning helped students in the experimental group to use the new words in the sentences and receive them in an interesting "anytime, anywhere" environment.

With regard to media richness theory, it can be said that the findings of this study showed that if the teacher is far away from students during learning, the content of learning can still be sent by even the lowest form of digital media, in this case text messaging, and the students will feel less embarrassed to ask questions if necessary. As a result, the learners could increase their level of learning. The findings of this study also revealed that according to the ARCS model of motivation theory, if content of learning has a suitable design with consideration of the ARCS model (attention, relevance, confidence and satisfaction) motivation will automatically emerge among the learners. These findings seem to parallel the results of similar studies as follows:

Keller (1983, 1984, 1987) reported that the problem solving of the ARCS model approach is to design the learning environments in such a way that students are motivated to learn. This model has two major parts. The first part represents the components of motivation. These parts are formed with the synthesis of the research on human motivation. The second part of the model is a design process that helps in formulating motivational enhancements for a given set of learners. The synthesis allows the researcher to identify the various elements of student motivation, and the design process helps the researcher outline the motivational characteristics of students in a given learning environment and then design motivational plans suitable for them.

4.7 LINKAGE BETWEEN THE QUANTITATIVE AND INTERVIEW FINDINGS

In general, the interview findings are supposed to support the quantitative results. Participants in interview data were students who had answered the open-ended interview questions. The quantitative analyses were conducted based on the responses to the satisfaction questionnaire. In this quantitative study, the researcher also aimed at obtaining efficiency of SMS learning on high school students. Both quantitative and interview findings confirmed each other's results. It means that SMS learning could have a significant effect on English vocabulary learning; as portrayed through the results of this study where the experimental group indicated a higher learning satisfaction that the control group. Furthermore, the correlation of learning scores and satisfaction among them was moderate.

This issue has been justified in the quantitative part of this study and has been confirmed by the results from the interview data. In addition, the themes that emerged from the students' interview showed that learners believed in the efficiency of SMS learning in general and believed that this kind of learning was positive in the that it has the potential to be interesting, the availability of content, necessity of the English language, efficiency of SMS and mobile learning and so on has enabled them to learn new English vocabulary effectively. It also has an effect on other language learning skills such as writing, listening, speaking and grammar structure. In conclusion, the most important finding is that there was high consistency between students' response of the quantitative research and those who participated in the interview sessions. The findings of this quasi experimental study also proved to be relatively in agreement with interview data. In conclusion, it can be said that the results of the interview sessions reinforced the quantitative findings.

4.8 SUMMARY

This chapter first presented the objectives of the study**.** This was followed by the demographic information of the participants and results from the quantitative portion of the research concluded for research question one and two were discussed.

After that the results of the ANCOVA for RQ1and *t*-test for RQ2 the results of correlation for RQ3 were presented. Then, the interview data analysis was presented. The findings of RQ4 and RQ5 of the study are discussed afterwards. Finally, a general conclusion was given for all research questions**.** The next chapter will present the discussion, conclusion and recommendations.

CHAPTER V

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The purpose of this chapter is to summarize the research as well as highlight key findings, limitations of the study and provide recommendations for future research. Once more, the objectives of this study were to: 1) examine the significant differences between the learning score of EFL learners in message text and paper text in learning English vocabulary among high school students; 2) to find out significant differences in learning satisfaction of EFL learners in message text and paper text in learning English vocabulary among high school students; 3) to investigate the significant relationship between the degree of achievement as a result of the use of text messaging and the students' level of satisfaction; 4) to explore how SMS learning can affect learning score; and 5) to explore how SMS learning can affect learning satisfaction.

5.2 RESEARCH SUMMARY

The purpose of this research was to allow the researcher to understand if utilizing SMS messages to help learn English vocabulary words would increase EFL learners' knowledge and understanding of the words as well as provide them with a more satisfactory learning experience. Cell phone (SMS) was selected as the medium for which to transfer the content of learning (new English vocabulary) to students because the researcher aimed at identifying differences in learning scores among students who are learning by SMS in comparison to those students who were learning the same content through the traditional method of pen and paper.

The sample chosen for this research was derived from the Iranian School in Kuala Lumpur. A total of forty one students were selected to participate in this research with twenty in the control group and twenty one in the experimental group. The results

showed that learning by SMS had enough effectiveness on the learning scores and overall learning satisfaction. Data analysis also showed a positive medium correlation between learning scores and learning satisfaction among all student participants in this study. Obtained results from the quantitative part confirmed the interview findings.

5.3 DISCUSSION OF RESEARCH FINDINGS

Findings from this study revealed that the participants played the most important role in selecting the way of teaching in the class or out of it. Furthermore, the participants of this study showed a remarkable progress not only in the area of vocabulary usage, which must be learned after finishing the semester, but also in other skills such as speaking and reading. Brown and Campion (1996) stated that good curricula are not sets of separated pedagogical parts, but rather should function as logical systems. Most failed curricula attempt to organize different sets of items, often because of a lack of a foundational framework that explains the underlying principles of learning and knowledge structure. Having a strong framework to guide curriculum development is the key. Therefore, it can be argued that the TPCK framework provides a good template for teachers to follow in creating technology blended learning experiences

As has been anticipated in literature (Figure 1.6) As a result of integration as Pedagogy (PK), mobile as a technology (TK) and English vocabulary knowledge as a content (CK) scores and satisfaction has gone up and motivation in students' learning experience as a TPCK were emerged. This result can be regarded as an output of these blending as Mishra and Koehler (2006) said that:

> *TPCK represents a class of knowledge that is central to teachers' work with technology. This knowledge would not typically be held by technologically proficient subject matter experts, or by technologists who know little of the subject or of pedagogy, or by teachers who know little of that subject or about technology (p. 1029).*

On the other hand, with the integration of technology to content material as Technological Pedagogical Content Knowledge (TPCK), the quantitative side of this research views the integration of technology to content material and Technological Pedagogical Content Knowledge (TPCK) as the input and output of this research to promote scores and satisfaction among students. In this way, it is hoped that they can affect student's motivation for better learning.

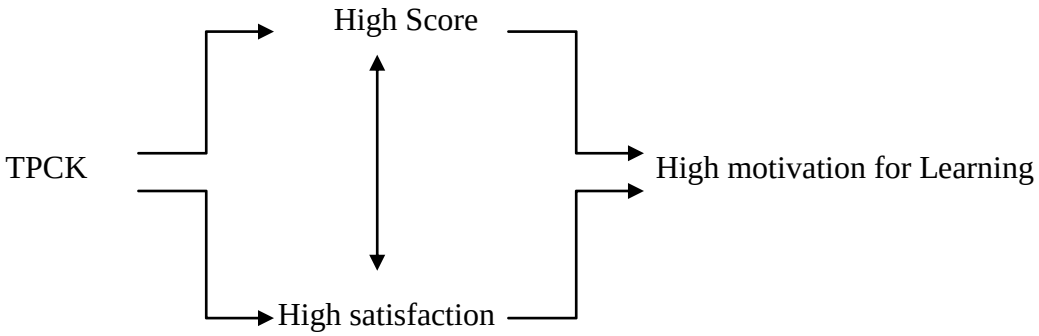

Figure 5.1: Conceptual model of input and output.

In addition, learning technology by design gave students the possibility to increase above the passive learner role and to take control of their learning. In other words, the progress to design-based activities has implication for educators. As mentioned before, in usual ways design cannot be educated; design is skilled in activity, depends on recognition of design quality, entails a creative process, is implicated in conversation and act and in action reflection can be engaged (Mishra & Koehler, 2003; Mishra, Zhao, & Tan, 1999; Schön, 1983, 1987, 1996).

As Abbasi (2009) Farhadi (2006), and Dahmardeh (2011) assert, learning English is limited to the classroom in Iran. English language is learnt like any other subjects in the school and there is no reinforcement out of the class. However, the finding of this study shows that SMS learning can make opportunity to provide practice

of learning out of class. In fact, ubiquitous SMS learning makes availability of learning anywhere and anytime. In Iran, most of the learners pass the English final test successfully but most of them are incapable of applying English words in their written or oral tasks in real life situations. In contrast, the data emerging from interview results of this study confirm that students can use content of learning in real life if they need.

As already mentioned, instruction is the arrangement of information and environment in order to facilitate learning. The transmission of information from source to a destination is called communication (Smaldino, Russell, Heinich, & Molenda, (2005).

Since fresh learning usually depends on taking in new information, effective instruction cannot take place unless communication takes place. Therefore, it is helpful to know something about the communication process so that instructional media can be used effectively.

In this study, instructional communication is represented by text messaging (SMS) among students and the teacher. The result showed that content of learning as "information" and "SMS" as in environment has been arranged and has affected the students' learning experience. In other words, when students have access to content of English vocabulary inside their mobile phone (SMS), automatically arrangement has been done and then learning experience occurred. In addition, when the transmission of English vocabulary has been done via SMS among students and teachers, communication could affect learning experience.

Moreover, Song (2004) and Al-Omari (2009) mentioned that the design of course content is a motive itself to predict satisfaction. Students will perform better if they have access to innovative inventions. On the other hand, they must integrate the scientific philosophy involved in instructional strategies. Isaman et al. (2005) uses an analogy to clarify the point that instructional strategies must be integrated with other

issues and these strategies are like the invention of the airplane that had to integrate the discovered principles of lift, pull and flight. In order to create a flying airplane, the Wright brothers had to first discover the principles of aerodynamics. Only upon discovering and learning the science of aerodynamics could they incorporate it with appropriate technology and succeed in developing the airplane.

In this study, the researcher try to integrate SMS learning in English vocabulary learning with consideration of theories and mediator variable to promote learning experience among students, the finding showed that combination of these principles as a part of education can have positive effect on motivation among learners and increase the level of learning base of bloom Taxonomy.

According to Isaman et al. (2005), instructional science deals with identifying the variables to consider (descriptive theory) and the potential relationship between those variables (prescriptive theory), and then empirically testing these relationships in both a field and lab setting.

With regarding these matters, in this study, media richness, Bloom's taxonomy and motivation theory has been considered as descriptive theory combing with SMS learning as independent variable and learning and satisfaction scores as dependent variables considered as prescriptive theory and then empirically testing these relationships between learning and satisfaction scores in field of third grade high school students.

As Rae and Carswell (2001) asserted, the distance education environment can provide the physical separation between teacher and student and inaugurates new flexibilities in conveying and receiving instruction which assists and accounts for the popularity of distance education.

Moreover, According to Heo and Chow (2005), the online electronic component in the education process helps cheer the students up and they have reported that they have felt less threatened or embarrassed to seek help than in the traditional classroom.

Findings shows that the students were more satisfied during SMS learning not only when they wanted to ask questions of teachers but also when doing assignment (paraphrasing).

On the other hand, when the instructor and students are far away from each other and there is a distance learning, lean media can be more desired because they reduce social and emotional cues and therefore can reduce pressure upon learners. In some parts of satisfaction questionnaire there was some item evaluating the comfort ability of SMS learning about pressure. With regard to this matter, findings show less pressure said by participants.

The other advantage is that students have to rely on their own abilities and it is an important factor in increasing their self-esteem indirectly. In addition, as Li (2005) has pointed out, there is a strong relationship between the introduction of ICTs and language learning changes. He adds that a number of issues in the situation of text messaging addressed in this study including linguistic features of SMS have practical significance of these unique characteristics and the communicative functions in this situation.

Agca (2013) believed that students show the mobile device usage as innovative and funny applications in vocabulary learning. Mobile learning environment created curiosity for students and made the vocabulary learning activity more attractive with motivating them in positive way.

A study conducted by Kim (2012) on using short message service for vocabulary learning by students' English proficiency indicated that the SMS groups performed better than the groups who had received printed materials, regardless of students'

proficiency levels. Based on the results of this study, most of the students receiving SMS preferred this new method to learn English words. Another study accomplished by Wu (2014) on learning ESL vocabulary with smart phones related to "effectiveness of smart phones on helping ESL college students learn English vocabulary" revealed that the students in the experimental group outperformed those in the control group significantly. The results of the present study also confirm that students like this new method regarding SMS learning. On the other hand, this study could provide engaging learning material, two way communication between teacher and students, student involvement, student motivation, a respect for privacy; attractive mobile-learning technical environment and great potential for providing learners with complementary opportunities to re-contextualize, recycle, and consolidate vocabulary as already mentioned in the literature.

For instance, according to Wang and Smith (2013) regarding reading and grammar learning through mobile phones, examined both the feasibility and the limitations of developing English reading and grammar skills through the mobile phone interface. Information gathered from participants and server logs indicated that reading and learning grammar using mobile devices is regarded as a positive language experience. However, the data also indicated that the success of any mobile learning project could be limited unless certain criteria are applied. This includes (a) providing engaging learning materials that are neither too long nor overly-demanding; (b) a proper degree of teacher monitoring; (c) student involvement; (d) the need for incentives; (e) a respect for privacy; and (f) a safe and secure mobile-learning technical environment.

Another study by Saran et al. (2012) about mobile language learning and contribution of multimedia messages via mobile phones in consolidating vocabulary aimed at investigating the effectiveness of using multimedia messages via mobile phones in helping language learners consolidate vocabulary. Results of the quantitative

study showed that using mobile phones had positive effects on students' vocabulary acquisition. The finding proposed that mobile phones offer great potential for providing learners with complementary opportunities to re contextualize, recycle, and consolidate vocabulary.

Oz (2014) about prospective English teachers' ownership and usage of mobile devices as m-learning tools aimed to better understand how prospective teachers of English language teaching (ELT) use mobile technology for learning and how they want to use mobile devices for teaching in the future. A total of 144 student teachers enrolled in an ELT department at a major state university participated in the study. Based on descriptive statistics, the findings showed that a great majority of the participants currently own and use phones, particularly internet capable ones, MP3 players, and tablets. Nearly four in ten prospective English teachers plan to buy a tablet (e.g., iPad), three in ten intend to purchase smart phones (e.g., iPhone), and one in ten is likely to purchase an e-book reader (e.g., Kindle.) over the next year or two. Further, nearly all the participants stated that despite the impediments, they wanted to use mobile devices in their English lessons and teaching regularly in the future. The biggest barriers to appropriate application of mobile devices in ELT included the great versatility in device types, pedagogical justifications, administrative factors, lack of training, and lack of devices due to financial restrictions

The result of another study carried out by Oberg and Daniels (2013) on the effectiveness of student-centered mobile learning instructional method in language acquisition aimed at a self-paced instructional method based on the use of Apple's iPod Touch personal mobile devices to deliver content was compared with a group-oriented instructional method of content delivery in terms of learner acquisition of course material showed a significant difference emerge between the groups; while the experimental group scored consistently higher than the control group. Results of a post-

treatment survey given to the experimental group also indicated very positive learner attitudes towards the self-study iPod Touch-based instructional method.

Obari et al. (2012) have conducted a study regarding the use of digital storytelling and blog activities to make CALL classes more dynamic and personalized for both teachers and learners. The goal of the study was to examine the effectiveness of blended learning in improving English language proficiency, including presentation skills with blogs and PowerPoint slides. Obari et al. presented results from the Computerized Assessment System for English Communication (CASEC) showing that students' English proficiency improved after being exposed to blended learning.

Lin (2014) had studied English reading in a mobile-assisted extensive reading program. Based on this study previous studies on Extensive Reading Programs (ERPs) have reached positive conclusions, namely, that an ERP for language learners is effective in improving their linguistic abilities related to reading and promoting their motivation and attitudes toward reading. Current mobile devices, even though suitable for reading, have not yet been applied for developing language learners' linguistic proficiency and affective abilities in any ERP. The aim of the present study was to address this gap in literature by investigating the effects of using mobile tablet PCs in an online ERP on adolescent English learners' online activities, reading ability and users' perceptions. Two intact classes taught by a same English teacher in a senior high school in Taiwan were recruited to participate in a ten-week online ERP. One class was assigned to the mobile group reading their assignments on their tablet PCs and the other, the PC group, reading theirs on desktop PCs. During the online ERP, each class dedicated one class period every week for in-class reading and the participants in both classes were encouraged to read as much as possible after the class period. The results indicated that the mobile group not only did better than the PC group in online activities and reading achievement but also showed greater appreciation of the online ERP than

their PC counterparts. The study also proposed two directions for future studies on mobile-assisted reading. They included learners' studying textbooks and their reading strategies on mobile devices.

Hwang and Chen (2013) declared that it is beneficial for students to experience situational learning, especially for English as a foreign language (EFL) learning. Providing more listening and speaking opportunities could help EFL students with English learning. Based on this study the proposed system attempts to help participating EFL students by presenting learning contexts in familiar situations, such as during lunch at school. The results show that the proposed system and designed activities provided EFL elementary school students with listening and speaking practice opportunities in basic vocabulary and simple sentences with the support of familiar, situational learning. In the study, the experimental group learned multimedia-based learning materials about food materials at lunch with PDAs. In contrast, the control group learned via paper-based learning materials in class without real contextual support. Findings revealed that the experimental group significantly outperformed the control group in learning achievement. By providing recommended sample voices recorded by peers, students in the experimental group could repeatedly listen to the recordings in familiar situations, thus obtaining more opportunities to practice and interact with peers later. The other significant finding is that the number of peers used to practice speaking English in daily contexts, defined as practice diversity, was significantly correlated to learning improvement. That is, when students practiced speaking English with an increased number of peers, in familiar contexts, their English skills improved. In addition, students in the experimental group extended their learning from school to home. Therefore, the proposed system and activities can help EFL students, particularly novices, listen to and speak English in familiar situational contexts.

Another finding of current study emerged from data analysis show that the design of this instructional technology with the development of information and communication technologies has led to innovations in teaching activities. Based on this current study, the effect of the SMS learning integrated to learning materials using English vocabulary learning has created attractive environment for learning experiences. Other studies confirm this result as already mentioned in literature as follows:

For example, Agca and Ozdemir (2013) believed that the importance given to foreign language with the development of information and communication technologies has led to innovations in teaching activities. New modern ways have been sought for the use of information technologies in foreign language courses and how these technologies to be transferred in more effective and engaging way. Based on this study, the effect of the multimedia content integrated to learning materials using 2D barcode technology to vocabulary learning and students' ideas about this new learning environment were investigated. In conclusion, mobile assisted learning environment has increased students' level of vocabulary for the target words. Students' opinions about this new environment supported the results.

Al-Jarf (2012) investigated mobile technology and student autonomy in oral skill acquisition and found significant differences between both groups as a result of using the mp3 self-study lessons. The experimental group made higher gains in listening and speaking abilities. Improvement was noted in listening comprehension, oral expression, fluency, pronunciation correctness, and vocabulary knowledge. Results also showed positive correlations between (a) practice time and number of lessons covered by the students and (b) listening and speaking posttest scores (i.e., improved listening and speaking skills). Students reported positive attitudes toward the mp3 self-study listening and speaking lessons and reported several benefits.

Another study conducted by Hsu (2015) aiming at providing adaptive assistance to improve the listening comprehension of eleventh grade students. This study developed a video-based language learning system for handheld devices, using three levels of caption filtering adapted to student needs. The finding specified that students in the experimental group preferred adaptive captions, enjoyed the exercises more, and gained greater intrinsic motivation compared to those in the control group

According to Hsu et al. (2013) regarding the effects of different display modes of video captions on mobile devices, including non-caption, full-caption, and target-word modes, on the English comprehension and vocabulary acquisition of fifth graders showed significantly better learning effectiveness in terms of vocabulary acquisition than those in the control group. Furthermore, in terms of listening comprehension, the students in all three groups made remarkable progress.

Furthermore, Hsu and Lee (2011) carried out an experiment to investigate learning tourism English using mobile phone technology. The findings indicated that MG students generally appreciated the experience of mobile learning (m-learning) but some aspects of m-learning were not perceived positively by them. In terms of the effectiveness of m-learning, statistical analyses confirmed the benefits of m-learning to vocabulary retention and grammar learning. The large effect size also validated the applicability of m-learning to learning tourism English.

5.4 CONCLUSION

The findings of this study declared that students in the SMS learning method (strategy) not only obtained high scores but had satisfaction during the learning process. Moreover, there was positive medium correlation between satisfaction and high scores as shown by quantitative analysis. The qualitative findings showed that when learners got high scores and had satisfaction as well, their responses to interview questions were

positive. In this case, the results of the quantitative and qualitative data were in parallel. Moreover, the results of this study showed that the students could develop their abilities in different skills if teaching materials were taught to them in an appropriate way.

The findings of this research are parallel to Bloom's Taxonomy as it is said that the level of learning goes up when the learners have more opportunity to practice, and in this study SMS learning helped the students to use the new words in the sentences and receive them in an interesting modern learning environment "anytime and anywhere." Regarding media richness theory, it can be said that the findings of this study showed that if the teacher is far away from students during learning, and the content of learning can be sent by even the lowest form of media such as text messaging, the students feel less embarrassed and can ask questions if they need. As a result, the learners can increase their level of learning. The findings of this study also revealed that according to the ARCS model of motivation theory, if the content of learning has a suitable design with consideration of the ARCS model (attention, relevance, confidence and satisfaction) automatically motivation among learners will emerge.

5.5 FUTURE IMPLICATIONS

The results of this study serve as a basis for this method to be considered for adoption in the following manner:

1-This method can be used for formal education in some rural areas, because allocating of education is costly.

2-In informal education, this method can be used as a complementary method for helping students to have high level of learning according to Bloom's Taxonomy (1970)

3- Changing students' beliefs in using mobile technology for educational purpose.

4-It is hoped this study can help teachers and policy makers in education, to use the learners' preferences in selecting teaching methods.

5.6 LIMITATION OF STUDY

There are some limitations to this present research that can affect the generalization of the results of this study. These limitations included the following:

- Small sample size
- Not randomly assigned to group
- Only conducted in the Iranian School.
- Owing to the lack of a tracking mechanism, the frequency of reading the SMS vocabulary lessons is self-reported by students. The validity of the relevant results may be affected by students' self-bias. If participants had been required to send their response by SMS, they would have been pushed to be more involved in vocabulary learning via mobile phone.

Given the limitations mentioned, it should be emphasized that generalization of this study is limited. Hence more study with consideration of large sample in true experimental design is suggested.

5.7 RECOMMENDATIONS

5.7.1 STATE RECOMMENDATION

There is a centralized education system in Iran. The content of books is prepared in the country's capital (Tehran) in only a hard copy format. The researcher suggests that some material be made available as a soft copy, which can be reviewed on such devices as palm top, tablet and even mobile phone (SMS). In this way, the students can use sound and video clips and so on in order to increase not only their motivation for learning but also the availability of materials anywhere and anytime.

5.7.2 REGENCY RECOMMENDATION

In general offices in the provinces and towns, authorities can have some classes in order to train the teachers for more familiarity with instructional design and the use of educational devices. In this way, teachers will be aware of the importance of integrating technology with content of learning.

5.7.3 RECOMMENDATION FOR SCHOOLS

According to school rules, having mobile phone inside the school is prohibited in Iran. Although the researcher used the Iranian school in Kuala Lumpur as a population of this study, if someone wants to do this same study in Iran students have limited accessibility to mobile phones and it will be big difficulty for researchers. For that reason, the researcher recommends that authorities let students have access to mobile phones. With student access to mobile phones, educational content can be prepared for SMS learning – not just with the English language but with other subjects as well. The researcher suggests that not only should mobile phones be allowed without limitation but their educational use should be actively encouraged.

5.8 RECOMMENDATIONS FOR FUTURE STUDY

Although the instructional material is an internet based environment, it is limited with only related course activities. Even though people who learn in life-long learning frame have access to the mobile learning environment anywhere and anytime, because they have no internet connection with the mobile device out of the classroom this advantageous environment cannot be used enough. In similar studies, accessibility to the materials out of the classroom hours can be provided and academic achievements can be increased more. Mobile learning material used in this study contains vocabulary from only some of the third grade book in high school. Similar to this study, a research

enabling wider content from the course book can be done. Content in mobile learning environment contains limited amount of definitions. Mobile learning content can be richer to support vocabulary learning. Mobile devices can be designed also for speaking and writing activities and similar to this study they can be used in classroom activities.

With regard to these findings, areas for further research are also advised. This study focused on SMS learning with high school students. Future research can be carried out at other educational levels – both below and beyond the high school age group. Also, the amount of time allotted to conduct the experiment was rather short – only two months. The time constraints in conjunction with the limited number of participants led to individual extreme scores having a disproportionate effect on overall mean scores.

The features of interaction and immediacy of the mobile phone as a learning medium would be highlighted. In one sense, this interaction activity can function as a tracking mechanism to see whether students read the SMS lessons. The higher reading frequency of the SMS should make the investigation of the effectiveness of using the mobile phone as a learning medium more valid. Future research may investigate whether vocabulary recycling occurs in this approach.

In this study, SMS learning was chosen just for the purpose of learning English vocabulary. However, future research does not need to be limited in its use of SMS learning. Future studies can focus on other skills such as mathematics, geography, literature, history or foreign languages.

Lastly, due to limitations in the design of this research, a quasi-experimental design was utilized. With quasi-experimental research there exist limitations for generalization. For the purpose of generalization, future studies can be conducted incorporating larger sample sizes for a true experimental design. The same study can be

done in other countries, such as Malaysia and Thailand, in order to find whether a different context leads to differences in effectiveness in learning by SMS.

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APPENDIX 1

(LEARNING SATISFACTION QUESTIONNAIRE)

Dear student:

You have chosen to be a respondent in a study that studies the effects of learning by **text messaging (SMS)** on vocabulary learning upon high school students. Please study and answer following questions carefully and tick **one** response that best reflects your agreement. Please do not write down any things on the questionnaire.

LVVSMS=Learning Vocabulary via Short Message Service

1= Strongly Disagree, 2= Disagree, 3= Somewhat Disagree

4= Somewhat Agree, 5= Agree, 6= Strongly Agree

	Questions	***1***	***2***	***3***	***4***	***5***	***6***
1	***LVVSMS*** takes less time.						
2	***LVVSMS*** helps me to get high marks in English vocabulary test.						
3	I can learn easier via ***SMS.***						
4	The retrieval of learned material is easier for me by LVVSMS						
5	LVVSMS increases my motivation to continue learning English.						
6	I can apply something I have learned through SMS in social environment.						
7	Because I can communicate with my teacher through **LVVSMS** I can learn better.						
8	I am able to communicate with other classmates while learning by **LVVSMS**.						
9	Using cell phone, as a new learning device helps me learn more words.						
10	Using **cell phone** can increase my ability to apply my vocabulary knowledge.						
11	**LVVSMS** causes me to have good social relationship with people.						
12	**LVVSMS** helps me have a good verbal relationship with people.						
13	**LVVSMS** helps me feel independent in my daily life.						
14	**LVVSMS** can help me learn better because the content of learning is available any time.						
15	LVVSMS can help me learn better because the content of learning is available anywhere.						

APPENDIX 2

(LEARNING SATISFACTION QUESTIONNAIRE)

Dear student:

You have chosen to be a respondent in a study that studies the effects of learning by **Paper text** upon high school students. Please study and answer following questions carefully and tick **one** response that best reflects your agreement. Please do not write down any things on the questionnaire.

LVVPT = Learning Vocabulary via Paper Text

1= Strongly Disagree, 2 = Disagree, *3* = Somewhat Disagree

4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree

	Questions	***1***	***2***	***3***	***4***	***5***	***6***
1	**LVVPT** takes less time.						
2	**LVVPT** helps me to get high mark in English vocabulary test.						
3	I can learn easier by **paper text**.						
4	The retrieval of learned material is easier for me by **LVVPT**.						
5	**LVVPT** increases my motivation to continue learning English.						
6	I can apply something I have learned through **paper text** in social environment.						
7	Because I can communicate with my teacher through **LVVPT** I can learn better.						
8	I am able to communicate with other classmates while learning by **LVVPT**.						
9	Using **paper text**, as a learning strategy, helps me learn more words.						
10	Using **paper text** can increase my ability to apply my knowledge.						
11	**LVVPT** causes me to have good social relationship with people.						
12	**LVVPT** helps me have a good verbal relationship with people.						
13	**LVVPT** helps me feel independent in my daily life.						
14	**LVVPT** can help me learn better because the content of learning is available any time.						
15	**LVVPT** can help me learn better because the content of learning is available anywhere.						

APPENDIX 3

INTERVIEW QUESTIONS

1. How would you describe your proficiency in English?
2. What has been your personal experience in learning English?
3. Have you had any opportunity to apply your spoken English skills in different settings?
4. How would you describe your confidence level when continuing English?
5. Can you describe the different learning methods for learning vocabulary you have experienced?
6. What vocabulary learning activity has been most helped to you?
7. What type of vocabulary activities allows you to apply new words in communication?
8. Please comment on what you perceive to be the strengths of the current learning methods/techniques.
9. Please comment on what you perceive to be the weaknesses of the current learning methods/techniques.

10. Do you have any other comments or suggestions?

APPENDIX 4

جملات زیر را با کلمات خودتان تغییر دهید

Instruction

Do paraphrase for sentences below

Be thankful* for the bad things in life. They open your eyes sight* to the good things you were not paying attention* to before.

Act in the valley so that you need not fear* those who stand on the hill.

The secret of life is honesty* and fair dealing. If you can fake* that you have got it made.

We think in generalities* but we live in details*.

Behind every great fortune* there is a crime*.Politics is perhaps the only profession for which no preparation* is thought imperative*.

An error doesn't become a mistake until you refuse* to correct it.

It's not that I'm so smart, it's just that I stay with problems* longer.

The man who views* the world at 50 the same as he did at 20 has wasted* 30 years of his life.

In youth* we learn; in age we understand.

Experience teaches only the teachable*.

The person who has lived the most is not the one with the most years but the one with the richest* experiences*.

If you will carry on the wayguided by human,you will find a HOPELESS* END.But if you will carry on the wayguided by Allah, you will findan ENDLESS* HOPE.

Great Britain and the United States are nations* separated* by a common language.

Take everything you like seriously* except* yourselves.

Science is organized* knowledge.Wisdom* is organized life.

Happiness* lies in good health and a bad memory*.

If money is your hope* for independence* you will never have it. The only real security for people is a reserve* of knowledge*, experience*, and ability*.

Do ordinary* for Allah he will do extra ordinary for you,Do natural* for Allah he'll do supernatural for u, Do possible* for ALLAH he'll do impossible* for you,

If you will carry on the way guided by human, you will find a HOPELESS* END.

But if you will carry on the way guided by Allah, you will find an ENDLESS* HOPE.

Life is like open book. We always turn* to new pages and grow into* new chapters, but we always hope that we all get a happy ending*.

"Pure* love* and suspicion cannot dwell* together*: at the door where the latter enters, the former makes its exit.

A student grabbed* a coin, Flipped* it in the air &said, “Head, I go to sleep.”

Tail*, I watch a movie. If it stands* on the edge* I’ll study

Medicines and friendship cure* our problems*.The only difference is that,

Friendship don't have an expiry* date.

You were born a original Don’t die a copy.

Don’t be afraid* your life will end, be afraid that it will never begin.

Great minds have purposes* others have wishes. Ability is nothing without opportunity.

Education* is not the filling of a pail*, but rather* the lighting* of a fire."

A Friendship is Sweet when its NEW. Its Sweeter when it’s TRUE, but it is Sweetest when the friend is like you.

Doctor: A person who cures* the ills by pills, and kills by his bills*.

Always draw* a circle around the ones you love, never draw a heart because hearts can be broken, but circles are never ending.

"Experience is the name so many people give to their mistakes*."

An error doesn't become a mistake until you refuse* to correct* it.

What is the height* of hope? It is: sitting in the exam hall, holding the question paper in hand & telling yourself dude, don’t worry. Exams will get postponed*!”

APPENDIX 5

SOME SAMPLES OF SMS (CONTENT OF LEARNING) SENT TO STUDENTS IN EXPERIMENTAL GROUP

5

Medicines and friendship cure* our problems*.The only difference is that,

Friendship don't have an expiry* date.

You were born a original .Don’t die a copy.

10

Don’t be afraid* your life will end, be afraid that it will never begin. Great minds have purposes* others have wishes.

Ability is nothing without opportunity.

18

Education* is not the filling of a pail*, but rather* the lighting* of a fire."

30

A Friendship is Sweet when its NEW.

Its Sweeter when its TRUE

But Its Sweetest when the friend is like you.

APPENDIX 6

PERMISSION LETTER FROM IRANIAN SCHOOL IN KUALA LUMPUR

بسمه تعالی

ولی محترم دانش آموز.....

با سلام و احترام

احتراما به استحضار میرساند اینجانب علی جهانی تقاضای اجرای پایان نامه تحصیلی خود را در مجتمع آموزشی امام خمینی به شرح ذیل می نمایم.

این پایان نامه که جز تز دکتری اینجانب در دانشگاه یو ام مالزی میباشد قصد دارد اثر بخشی یادگیری موبایل را در یادگیری لغات انگلیسی سنجد لذا پایه ی سوم دبیرستان (دو کلاس ،پسر دختر) به مدت 2 ماه تحت مطالعه به شرح ذیل خواهند بود.

1.دردو کلاس که معلم مشترک (آقای ..) دارند با اجازه ی والدینشان به دو گروه کنترل آزمایشی و کنترل تقسیم شده و در مدت لغات جدید انگلیسی را در قالب جملات جالب دریافت خواهند کرد (در گروه آزمایشی محتوای با پیامک دریافت خواهد شد و در گروه کنترل محتوای روی کاغذ معمولی به دانش آموزان تحویل می گردد.
2.در پایان زمان مطالعه نمره ی پایان ترم و میان ترم آنها مورد مقایسه قرار خواهد گرفت.
ویا شش نفر از دانش آموزان مصاحبه حضوری انجام خواهد شد .
در مدت مطالعه و بعد از آن نام دانش آموزان بصورت غیر واقعی در گزارش تحقیق خواهد بود
خواهشمند است رضایت خود را جهت شرکت فرزند خود در این تحقیق اعلام نمایید.

علی جهانی
91/1/31

اینجانب..... ولی دانش آموز..... رضایت خود را جهت شرکت فرزندم در تحقیق مورد

نظر اعلام می نمایم.

امضا ولی دانش آموز

APPENDIX 7

PERMISSION LETTER FROM PARENTS

بسمه تعالی

مدیریت محترم آموزشگاه (مجتمع آموزشی امام خمینی) 91/1/31

با سلام

احتراما به استحضار میرساند اینجانب علی جهانی کارمند آموزش و پرورش بجنورد با شماره پرسنلی 31070148 تقاضای اجرای پایان نامه تحصیلی خود را در آن آموزشگاه محترم به شرح ذیل می نمایم.

این پایان نامه که جز تز دکتری اینجانب در دانشگاه یو ام مالزی میباشد قصد دارد اثر بخشی یادگیری موبایل را در یادگیری لغات انگلیسی بسنجد. لذا پایه ی سوم دبیرستان (دو کلاس ،پسر دختر) به مدت 2 ماه تحت مطالعه به شرح ذیل خواهند بود.

1.دردو کلاس که معلم مشترک (آقای ..) دارند با اجازه ی والدینشان به دو گروه کنترل آزمایشی و کنترل تقسیم شده و در مدت تحقیق لغات جدید انگلیسی را در قالب جملات جالب دریافت خواهند کرد (در گروه آزمایشی محتوای با پیامک دریافت خواهد شد و در گروه کنترل محتوای روی کاغذ معمولی به دانش آموزان تحویل می گردد.
2.در پایان زمان مطالعه نمره ی پایان ترم و میان ترم آنها مورد مقایسه قرار خواهد گرفت.
وبا شش نفر از دانش آموزان مصاحبه حضوری انجام خواهد شد .
در مدت مطالعه و بعد از آن نام دانش آموزان بصورت غیر واقعی در گزارش تحقیق خواهد بود
خواهشمند است دستور فرمایید اقدامات لازم مبذول گردد.

علی جهانی

APPENDIX 8

SATISFACTION QUESTIONNAIRE (TUCKMAN,1999)

(USED ONE FOR CONSTRUCTING QUESTIONNAIRES IN THIS STUDY)

SATISFACTION SCALE

1. Do you ever feel like skipping this class?

1	2	3	4	5
never	rarely	sometimes	often	always

2. Do you like this class?

1	2	3	4	5
very much	quite a bit	it's all right	not much	hate it

3. How much do you feel you have learned in this class?

1	2	3	4	5
a great deal	quite a bit	a fair amount	nor much	nothing

4. Are you glad you chose or were assigned to be in this class?

1	2	3	4	5
very glad	most of the time	sometimes	not too often	not at all

5. Do you always do your best in this class?

1	2	3	4	5
all the time	most of the time	sometimes	usually not	never

6. Do you like the way this class is taught?

1	2	3	4	5
very much	quite a bit	a fair amount	not much	not at all

7. Does the teacher give you help when you need it?

1	2	3	4	5
always	most of the time	usually	sometimes	never

8. Do you find the time you spend in this class to be interesting?

1	2	3	4	5
very much	quite	fairly	not too	not at all